RESTRAINT OF AGGRESSIVE DESIRES, ANGER, AND AGGRESSION: AN EXPLORATORY STUDY.

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ABSTRACT

This study was primarily exploratory, and investigated 1) the relationship between restraint of aggressive desires and aggression; 2) the relationship between restraint of aggressive desires and anger ; and 3) the interaction of anger and restraint in relation to aggression. Restraint as developed in the eating disorders literature was reviewed along with relevant areas of aggression and anger. The Restraint of Aggressive Desires (ROAD) scale was developed, which appears to have good psychometric properties; as well as the Self-report Aggressive Behaviour Questionnaire (SABQ), which measured both frequency and average intensity of aggressive behaviour. The other measures used in this study were the trait anger, anger-in, anger-out, and anger control subscales of the State-Trait Anger Expression Inventory. Megargee's algebra of aggression was used to provide a working structure for the study. Both a student and prisoner sample were used. Results did not support restraint theory which predicts that high restrainers would on average behave aggressively less frequently than low restrainers, and that high restainers' self-control is infrequently disinhibited resulting in aggression of high intensity. Even when only subjects with above average levels of trait anger were considered, frequency of aggressive behaviour fitted restraint theory predictions, but average intensity of aggressive behaviour did not. Of importance was that frequency and average intensity of aggressive behaviour were significantly and positively correlated. It was argued that the results support social learning theorists, who would argue that instigation to aggression is not innate or unavoidable. Three types of aggressive individual were proposed: overcontrolled suppressors, undercontrolled expressors, and frequent disinhibitors. Frequent disinhibitors appeared to potentially be the most aggressive on both aggression frequency and average intensity measures, and in the extreme it was suggested could commit very assaultive acts of violence on a repeated basis.

CHAPTER 1. INTRODUCTION

1.1 OVERVIEW

This study was primarily exploratory, and investigated 1) the relationship between restraint of aggressive desires and aggression; 2) the relationship between restraint of aggressive desires and anger; and 3) the interaction of anger and restraint in relation to aggression.

1.2 DEFINITIONS

Anger, hostility, aggression, and violence are concepts that are often defined differently and from different perspectives. This reflects that the distinctions between anger, hostility, aggression and violence are far from agreed upon, and await resolution. Spielberger, Johnson, Russell, Crane, Jacobs, and Warden (1985) reflecting that such terms are often used interchangeably and without agreement as to their conceptual differences, referred to anger, hostility, and aggression as the 'AHA! Syndrome'.

In this study the definitions of anger and aggression used were those proposed by Spielberger, Jacobs, Russell, and Crane (1983). Anger was defined as an emotional state that consists of feelings that vary in intensity from mild irritation or annoyance to fury and rage. Aggression was defined as destructive or punitive behaviour directed towards other persons or objects.

Hostility is closely linked to anger and aggression. Spielberger et al., (1983) defined hostility as follows; although hostility usually involves angry feelings, this concept has the connotation of a complex set of attitudes that motivate aggressive behaviours directed toward destroying objects or injuring other people. Hostility is a word that has often been interchanged with aggression, but it is conceptually tidy to restrict the term to attitudes.

The relationship between the physiological, emotional, cognitive, and behavioural aspects of human beings is complex, and a full understanding of

one of these needs to take the others into account. Although definitions of anger include the concept of emotion, the definition of an emotion itself is vigorously disputed. Studies of emotions not only suffer the difficulty of teasing emotion from the other intimately related processes (physiological, cognitive, and behavioural) conceptually, but empirical observations of emotions cannot be observed independently of them. Averill (1982,1983) stated that no subset of elements or kind of response is a necessary or sufficient condition to define a given emotion. Definitions of anger have often incorporated physiological, cognitive, and behavioural components. For example, Buss (1961) included facial-skeletal and autonomic components in his definition of angry reactions. Schachter (1971a) and Novaco (1975) included both physiological and cognitive factors in their definitions of anger. Also, it has been argued that an emotion cannot be separated from its social enviroment (Averill, 1982, 1983; Tavris, 1982a, 1982b). Averill (1982) included both subjective experiential and objective behavioural elements in his definition of emotion, including the phrase 'socially constituted syndromes'. Tavris (1982b) included in her definition of anger terms such as a social event, a process, a transaction, a way of communicating. Even Spielberger whose definition of anger adopted in this study included only feelings (Spielberger et al., 1983), in a later publication (Spielberger, 1988) added the phrase 'and that are accompanied by arousal of the autonomic nervous system'.

In line with the definitions adopted for this study the adjective aggressive will be used to describe only behaviour, rather than its usual broader use which would cover cognitions, behaviour, a personality trait, etc... Aggression refers to behaviour and hence is synonomous with aggressive behaviour. Violence is a term closely related to aggression and often used synonomously. Megargee (1984) suggested that violence is reserved for extreme forms of aggression likely to cause serious injuries or to threaten human life.

A number of researchers have made a distinction between hostile

aggression, and instrumental aggression (Bandura, 1973; Berkowitz, 1978; Buss, 1961; Spielberger et al., 1983). Spielberger et al., (1983) defined hostile aggression as aggressive behaviour motivated by anger, and instrumental aggression as aggressive behaviour directed toward removing an obstacle that stands between an aggressor and a goal, when such behaviour is not motivated by anger. Megargee (1985) adopted a similar distinction but used the terms intrinsic (or angry) instigation to aggression, which referred to the conscious or unconscious desire to injure someone's person, property, or reputation in some fashion, ranging from inflicting mild discomfort up to engaging in homicidal violence; and extrinsic instigation to aggression, which referred to aggression which is used by the aggressor as a means to an end.

The hostile and instrumental aggression distinction whilst of use, also has limitations. Firstly, the two categories are somewhat arbitrary. Behaviour motivated by anger may or may not be instrumental, i.e., goal directed (Averill, 1982, 1983); and goal directed aggression may or may not be motivated by anger. Averill (1982) made a distinction between goals that are intrinsic to anger, i.e., that are part of the legitimation of anger, and goals that are extrinsic. The terms hostile and instrumental aggression are linking two dimensions of aggression: whether or not aggression is motivated by anger, and whether or not aggression is goal directed. Secondly, to make the distinction empirically it is necessary to know whether the person behaving aggressively is angry, and whether the behaviour is goal directed. Such decisions are somewhat subjective, and rely upon the ability to judge intent.

Patterson (1985) believed that anger and aggression in the natural enviroment are more complex than the hostile and instrumental distinction suggests, and that both instrumental and hostile aggression may be part of the same complex process and in many instances one leads to the other.

Finally, the terms hostility and hostile aggression are somewhat confusing as they have two distinct meanings. Whilst hostility as defined

above refers primarily to attitudes, hostile aggression refers to aggression motivated by anger. Renaming hostile aggression as angry aggression would clarify any confusion.

This study is primarily interested in hostile aggression, i.e., aggression motivated by anger. However, this does not infer that instrumental aggression is unimportant, rather that it is largely outside the parameters of the research. Hostile aggression for the purposes of this study includes the following types of behaviour provided the behaviour is motivated by anger: a) direct aggression: verbal or symbolic, e.g., verbal abuse such as swearing, sarcastic remarks, symbolic guestures of abuse or insult such as 'the fingers', etc.; b) direct aggression: denial or removal of some benefit customarily enjoyed by the person one is angry at, e.g., withdrawal of affection, using the 'silent treatment', refusing sex with partner, etc...; c) direct aggression: physical aggression or punishment; d) indirect aggression, e.g., telling something to a third party in order to get back at the person, harming something important to the person; e) displaced aggression against a person, or against an animal or nonhuman object, e.g., throwing things, punching a hole in the wall, slamming doors, kicking the cat etc... These categories have been based on those of Averill (1982,1983) who categorized behaviours reported in response to getting angry. Whilst it is noted that the above behaviours could also be instrumental aggression, the categories were developed by Averill as behaviours engaged in, in response to getting angry. Of interest is that Averill also included a category of non-aggressive behaviours in response to being angry, including engaging in calming activities, talking the incident over with a neutral party with no intent to harm the offender, talking the incident over with the offender without exhibiting hostility.

The above definitions have been adopted for working purposes only, and are not meant to be exhaustive, nor intended to cover the various theories of aggression. Definitions are descriptive, arbitrary, and essentially heuristic devices (Schimmel, 1979).

Only one more term requires defining, namely restraint. Restraint is a term that has developed out of the eating disorders literature. Herman and Mack (1975) initially constructed the concept of restraint, developing it from the theories of Schachter and Nisbett (Ruderman, 1986). Ruderman (1986) defined restraint in her context as a cognitively mediated effort to combat an urge to eat. In this study restraint was defined as a cognitively mediated effort to combat an urge or desire to behave aggressively. Restraint involves conscious control, is cognitively mediated, and its target is behaviour. The phrase, restraint of aggressive desires, equates to the phrase, restraint of the desire to behave aggressively.

CHAPTER 2. LITERATURE REVIEW.

2.1 RESTRAINT

2.1.1 Origins of Restraint as a Concept

Restraint in this study has been defined as a cognitively mediated effort to combat an urge or desire to behave aggressively. The construct of restraint has arisen from the eating disorders literature, and was developed to describe how, and explain why, the eating patterns of obese people differ from those of normal weight people (Ruderman, 1986).

The construct of restraint has its origins in the obesity theories of Schachter (1968, 1971a, 1971b) and Nisbett (1972). Schachter (1968) in his internal-external theory of obesity, proposed that normal weight people controlled their eating behaviour predominantly by internal physiological cues, whereas the eating behaviour of obese people was predominantly triggered by external cues such as the sight and smell of food. Schachter (1971a, 1971b) expanded this theory by proposing that obese people were more responsive to environmental cues in general than were normal weight people, but only when the environmental cues were salient and impelling.

Extensive research on Schachter's theory has produced inconsistent findings, but there have been a number of problems in the research including finding appropriate measures of external responsiveness, defining and distinguishing internal and external cues, and in establishing appropriate ways of varying the intensity of external cues (Ruderman, 1986).

In an attempt to explain why the external responsiveness of obese and normal weight people might differ, Nisbett (1972) proposed a set point model of obesity. The set point is an homostatically defended ideal weight varying from individual to individual, and Nisbett hypothesized that obese people have higher than average set points. When a person tries to maintain a body weight below his/her set point, a number of consequences result, including external responsiveness and a sensation of constant hunger.

Despite some negative findings Nisbett's basic concept of a homostatically defended body weight remains viable (Ruderman, 1986).

Herman and Mack (1975) first used the concept of restrained eating to focus on people's concern with weight and eating behaviour, and specifically the tendency of some people to restrict their food intake in order to control their weight. Herman and Mack (1975) developed a restraint scale, and then tested the hypothesis that normal weight college females, with varying set points and differing in the extent of their concern about weight and restraint in their eating habits, would correspondingly differ in their reaction to the experimental removal of restraint. After consuming a milkshake preload, unrestrained eaters then ate less of a subsequent test food; whereas restrained eaters ate more of a test food. This paradoxical behaviour was termed counter-regulation and has been a robust finding (Herman & Mack, 1975; Herman & Polivy, 1980; Hibscher & Herman, 1977; Ruderman & Christensen, 1983; Ruderman & Wilson, 1979).

2.1.2 The Disinhibition Hypothesis

Herman and Polivy (1980) suggested that eating patterns are influenced by the balance between physiological factors prompting the desire for food, and efforts to resist that desire. The effort to resist the desire to eat is restraint. Further, they hypothesized that restrained eaters develop anomalous eating patterns characterized by dieting and periodic overindulgence, i.e., disinhibition of restraint. This disinhibition hypothesis proposes that the self-control of restrained eaters may be temporarily released or interferred with by certain events called disinhibitors. The disinhibition phenomenom suggests that such behaviours as emotional eating and external eating can be caused by chronic attempts at self denial of food, and bears a strong similarity to binge eating (Wardle & Beinart, 1981). Disinhibitors may be cognitive, emotional, or pharmacological.

Research into the disinhibiting impact of cognitions has centred on the use of preloads and consequent behaviour. The perception of having eaten high calorie preloads leads restrained eaters who tend to think in a rigid all-or-nothing fashion (Ruderman, 1985b), to overeat (Polivy, 1976; Spencer & Fremouw, 1979). Under some circumstances the anticipation of future dietary violations may also have this effect (Ruderman, Belzer & Halperin, 1985). The thought "I've blown it, the day is lost - I might as well continue to eat" is an example of a cognitive disinhibitor (Ruderman, 1986).

Self-perceptions also play a role in disinhibitions. Ruderman (1986) quoted a symposium paper of Kirshenbaum (1984) that investigated the influence of self-control skills on restrained and unrestrained eaters following a preload. Restrained eaters who perceived themselves as more self-controlled ate significantly more than restrained eaters who perceived themselves as lacking in self-control skills, or unrestrained eaters.

Kirschenbaum and Tomarken (1982) suggested that restrained eaters' perceptions of having overeaten must be followed by abandonment of self-monitoring if overeating is to occur, and that maintaining or re-engaging self-monitoring would prevent overeating. Ruderman (1986) suggested that affective processes may also mediate restrained eaters' responses to preloads. The perception of having overeaten may put restrained eaters in a dysphoric mood that, in turn, may disrupt self-control. Further research is required into the precise attributional changes during such episodes.

The importance of cognitive disinhibition is closely related to the area of attribution theory, and with the area of relapse prevention with addictive behaviours. The example of cognitive disinhibition cited above by Ruderman above is a manifestation of what Marlatt (1978) called the abstinence violation effect or AVE - the psychological reaction among individuals who have violated a self-imposed abstinence rule. Marlatt

(1985) described the abstinence violation effect as a two-staged process: 1) to the extent that a first lapse is attributed to stable and uncontrollable causes such as a lack of willpower or ability, a person will feel powerless to regain control and feel unable keep the lapse from escalating into a relapse; 2) the guilt and conflict associated with this attribution of self-blame have motivational or drive properties that energize behaviours or changes in cognitions designed to reduce the aversive state of dissonance or conflict. If an individual feels that the lapse has "blown it", one way to reduce the dissonance is to redefine oneself as "relapsed" (a victim of disease mechanisms beyond personal control) and allow one's behaviour to go "out of control".

Dysphoric emotions such as depression and anxiety also act as disinhibitors and impact on restrained and unrestrained eaters differently. The connection between dysphoric emotions and eating was originally made in relation to obesity, via the psychosomatic theory of obesity (Kaplan & Kaplan, 1957) and Schachter's (1971) externality theory. The psychosomatic theory stated that obese persons eat more in response to negative affect states, and postulated that overeating is learned behaviour that is usually a means of avoiding anxiety. Schachter stated that normal weight people would suppress their consumption of food in response to fear and anxiety, but that obese people's eating would remain unaffected due to their insensitivity to internal cues.

In contrast to the psychosomatic theory and externality theory, which focused on the relationship between eating, dysphoric mood, and the obese/nonobese; restraint theory focused on the relationship between eating, dysphoric mood and restrained/unrestrained eaters. The basic finding was that restrained eaters increased food consumption and unrestrained eaters decreased their food consumption when in a dysphoric mood (Ruderman, 1986). Herman and Polivy (1975) hypothesized that decreased eating among unrestrained eaters during strong emotional states such as anxiety or depression is due to physiological factors, but increased

eating among restrained eaters during the same periods of strong emotional arousal is due to loss of self-control, i.e., disinhibition. One suggested explanation is that for restrained eaters dysphoric emotions can temporarily place demands on their energies and decrease their motivation to diet (Herman & Polivy, 1984; Polivy and Herman, 1983). Alternatively, Ruderman (1986) suggested that negative emotional states may lead unrestrained eaters to attempt solace and distraction from their pain by eating, i.e., escape/avoidance behaviour. Further research is needed to clarify this.

A number of studies have examined the relationship between eating, emotion and restraint. Herman and Polivy (1975) found that when anxious, restrained eaters ate more, while anxious unrestrained eaters ate less. Polivy and Herman (1976) found that clinically depressed unrestrained eaters reported a significant weight loss, and restrained eaters a significant weight gain after the onset of depression. Several studies have used mood as the independent variable by manipulating mood as part of the experimental procedure. Baucom and Aiken (1981) induced what they called depressed or nondepressed mood and found a significant mood x restraint (dieting) interaction with dieters eating more when depressed than when nondepressed, and nondieters eating less when depressed than when nondepressed, i.e., both groups when depressed reversed their typical eating patterns. Also, among depressed subjects dieters ate more than nondieters, and among nondepressed subjects dieters ate less than nondieters. The above findings were found for both obese and nonobese subjects. Ruderman (1985a) induced dysphoric mood experimentally, noting that mood manipulation often induces changes in several emotions, and also found a significant mood x restraint interaction. Restrained eaters consumed more when in a dysphoric mood, and unrestrained eaters consumed similar amounts whether in a dyshoric mood or nondysphoric mood. Frost, Goolkasian, Ely, and Blanchard (1982) used experimental manipulations designed to induce three different mood states i.e., depressed, neutral and

elated; and classified subjects as either high restrainers or low restrainers using the Revised Restraint Scale. They found a marginally significant mood x restraint interaction. High restrainers induced into the depressed mood ate significantly more than high restrainers induced into neutral or elated moods, and more than low restrainers induced into a depressed mood.

Whilst there is strong evidence for both cognitive and emotional disinhibitors, the research suggests that the relationship between cognitions and emotions is complex, and both may well play a role in the process of any specific case of disinhibition.

Pharmacological disinhibitors include sedative and relaxing substances such as alcohol, which by interferring with self-control, might lead restrained eaters to overeat (Ruderman, 1986). Alcohol has been the substance most investigated, but the overall effects on the eating behaviour of restrained and unrestrained eaters vary under different circumstances and the role of alcohol requires further study (Ruderman, 1986).

In addition to the above work on disinhibition, research suggests a complex relationship between restraint and disinhibition, with enviromental cues including social factors modifying the process of disinhibition. Polivy, Herman, Younger, and Erskine (1979) found that social factors modified the regulatory responses of unrestrained eaters and the counter-regulatory responses of restrained eaters. Restrained eaters in the presence of an observor showed a regulatory eating pattern, and unrestrained eaters after being exposed to a dieting model, showed a counter-regulatory pattern.

2.1.3 Other Research

A second early hypothesis of restraint theory proposed that differences in the level of restraint underlie obese-normal differences in behaviour (Herman & Polivy, 1980; Hibscher & Herman, 1977). Specifically, obese

people were expected to show systematically higher levels of restraint than were normal weight people. This hypothesis was developed to explain Shachter's findings that obese people were more responsive to external food-related cues than normal weight people. The proposal was that these were correlates of restraint rather than obesity. This hypothesis does not logically flow from restraint theory and Ruderman (1986) in her review concluded that the hypothesis has not been supported: obese people in general do not behave as restrained eaters.

Herman and Polivy (1984) used the findings in the area of restraint to refine their boundary model for the regulation of eating. They proposed an upper and lower boundary of satiety and hunger, with a range of biological indifference in between. Within this range psychological factors have their greatest impact on the regulation of food. Herman and Polivy (1984) suggested that the zone of biological indifference is wider in dieters than nondieters; and that dieters have a third self-imposed diet boundary located between their hunger and satiety boundaries, representing a maximum desired consumption. Once restrained eaters transgress this diet boundary (disinhibition), they eat until they reach the satiety boundary. Binge eaters go beyond the satiety boundary, and anorexics set their diet boundary at a level close to the hunger boundary, and tolerate the discomfort of going below the hunger boundary.

A separate body of research in Germany developed a concept similar to restraint, that of latent obesity. Meyer and Pudel (1977) found that the rate of consumption of food intake differentiated obese from normal weight people, the rate slowing during a meal for nonobese but not for obese people; suggesting an impairment of satiety. However, Pudel (1978) also discovered a group of nonobese people whose rate of eating conformed to that of obese people - the 'latent obese'. The latent obese controlled their weight by consciously restricting food intake (restraint).

2.1.4 Measurement

The initial psychometric device for measuring dietary restraint was the Restraint Scale (RS) developed by Herman and Mack (1975). This five item questionnaire was expanded to eleven items (Herman & Polivy, 1975; Hibscher & Herman, 1977), and subsequently revised to a ten item version with simplified scoring (Herman, Polivy, Pliner, Threlkeld, & Munic 1978; Polivy, Herman & Warsh, 1978) and is referred to as the Revised Restraint Scale (RRS). However, serious problems emerged with the Revised Restraint Scale, primarily with construct validity. Factor analytic studies revealed that the Restraint Scale measured not only a dietary restraint factor, called concern with dieting, but also a different construct, called weight fluctuation (Blanchard & Frost, 1983; Drewnowski, Riskey & Deser, 1982; Ruderman, 1983; Wardle 1980). Ruderman (1983) pointed out that weight fluctuation scores in the Revised Restraint Scale were absolute and not relative, thereby inflating scores for obese individuals. Also, internal reliability was also questioned when a coefficient alpha of 0.86 was obtained in a normal weight sample, and 0.51 in an obese sample (Ruderman, 1983).

Serious problems exist with the Revised Restraint Scale, but the problems are with the scale, not with the concept (Stunkard & Messick, 1985). Consequently, several new scales attempting to measure restraint have been developed. Van Strien, Frijters, Roosen, Knuiman-Hijl, and Defares (1985), developed what is called the Dutch Eating Behaviour Questionnaire (DEBQ), which attempts to measure emotional eating, restraint, and external eating/perceived hunger. Wardle (1986, 1987) investigated the DEBQ, and with respect to restraint concluded that the scale has good reliability and validity, and that it will prove a useful instrument which avoids some of the drawbacks of the Restraint Scale. In addition, Stunkard and Messick (1985) developed a three factor eating questionnaire to measure dietary restraint, disinhibition, and hunger. No validation investigations have yet been published, but this scale also

appears to have a useful role in future research.

One problem with the restraint scales is a tendency to confound behavioural outcome with attempted control (or effort to combat the desire to eat). The Revised Restraint Scale emphasises outcome, e.g., weight fluctuation, consequences of overeating (guilt), etc...; the restraint factor of the Three-Factor Eating Questionnaire measures "behavioural restraint" which equates to successful conscious control; and the DEBQ measures a mixture of successful restraint and effort irrespective of outcome. Interpretation of these scales needs to take these differences into account.

2.2 AGGRESSION

2.2.1 Introduction

Aggression has been defined in this study as destructive or punitive behaviour directed towards other persons or objects. Aggressive behaviour, so defined, can range from very mild to very intense, e.g., from verbal insult to homocide. Violent crime is on the increase, and aggression, particularly physical aggression, is of major concern. Aggression can be overt or covert, direct or indirect, intentional or unintentional, real or symbolic, verbal or physical (Megargee, 1985). Aggression is not a diagnosable syndrome of psychopathology, and although aggressive behaviour is related to a number of DSM 3 disorders, e.g., conduct disorders, passive-aggressive personality disorders, and antisocial personality disorders, most aggressive behaviour is not carried out by people classifiable within DSM 3 criteria (Megargee, 1984).

Aggression is a complex phenomenon, and theories are as broad as the schools within psychology. Many books have been written on the subject, and it is not intended here to attempt to be comprehensive, but to introduce theories to give sufficient meaning to this study. First, however, Megargee's algebra of aggression will be described in order to provide a framework.

2.2.2 Megargee's Algebra of Aggression

Aggression can usefully be viewed as the target behaviour with a number of contributing variables. Megargee developed an algebra of aggression, which he has described over his years of research (e.g., Megargee, 1966, 1971, 1984, 1985). In it Megargee has identified four broad factors that interact to determine the strength of an aggressive response, which he described as follows (Megargee, 1985):

1) Instigation to aggression: This is the sum of all the internal factors which motivate a person to behave aggressively. This not only includes any desire to injure the victim (angry instigation) but also any wish for other outcomes in which an aggressive act might result (instrumental instigation);

2) Habit strength: This is the degree to which aggressive behaviour has been reinforced in the past. The more a given aggressive response has been rewarded or successful, the more likely it will be chosen again;

3) Inhibitions against aggression: These are the sum of all internal factors opposing a particular aggressive act directed at a target. These include moral prohibitions such as conscience or 'superego', learned taboos, bonds of empathy with the victim, and utilitarian concerns;

4) Situational factors: These may either facilitate or impede the overt expression of aggression.

At any given time, for any particular aggressive act directed at a given target, the interaction of these four variables will determine whether that act against the target is possible (Megargee, 1985). The aggressive act will be blocked if inhibiting factors outweigh motivating ones. The aggressive act is possible, but will not necessarily occur, if motivating factors outweigh inhibiting factors. At any given time, several different aggressive responses aimed at various targets may be possible in the sense that the motivating factors outweigh the inhibitions. They must compete, however, with one another, and with any possible nonaggressive responses. In this response competition, the alternative affording the greatest

satisfaction, with the least cost, should be chosen (Megargee, 1985).

The above algebra of aggression provides a useful framework with which to approach a study of aggression. The aetiology of aggression is multifactorial with many factors contributing to any given aggressive response. Whilst prediction is not the prime concern of this study, the factors in Megargee's algebra of aggression can be used as predictor variables, and Monahan (1981) stated that they can be categorized into two types of predictor variables, namely personality factors and situational factors, and the interaction of the two. Monahan (1981) also pointed out that the two types of factors are not independent; certain personalities seek out certain situations.

2.2.3 Traditional Theories of Aggression

In considering theories of aggression one is immediately confronted with the nature versus nurture debate. Theories vary greatly in the importance they place on innate determinants versus the role of learning and experience. Numerous books discuss the theories of aggression including Johnson (1972); Megargee and Hokanson (1970); Scherer, Abeles, and Fischer (1975); Siann (1985). Four traditional theories are briefly described below, and the above books have been drawn upon to do this.

1. Lorenz's Ethological Approach.

Lorenz's (1966) perspective of aggression views both the instigation to aggression and inhibitions against aggression as innate. In human evolution the equilibrium of killing potential (instigation) and social inhibitions have been upset by technological advances which developed artificial weapons. Innate inhibitions, which evolve slowly, were outstripped by technological advances. This innate view of both instigation and inhibition, predicts that human violence cannot be decreased by education, or by eliminating frustrations, rather opportunities should be provided for the discharge of aggressive instigation.

2. Freud's Psychoanalytic Approach.

Freud (1959a,1959b) postulated in addition to the life force (libido or eros), the existence of a fundamental human drive toward aggression and destruction. This drive, which he called the death instinct, represented a basic striving of all organisms to return to an inorganic state. Overt aggression was seen as the outward manifestation of these instincts. Whilst Freud believed this aggressive motivation (instigation to aggression) to be innate, he believed inhibitions developed during childhood as a result of the resolution of the Oedipus complex and consequent formation of the superego, or conscience. Consequently, efforts to prevent aggressive motivations from developing would be in vain, whereas the fostering of inhibitions against aggression in the child's development has hope of decreasing aggression (Megargee & Hokanson, 1970).

3. The Yale Group's Frustration-Aggression Hypothesis.

Dollard, Doob, Miller, Mowrer, and Sears (1939) proposed in their Frustration-Aggression Hypothesis that aggression is always a consequence of frustration which they defined as an interference with the occurence of an instigated goal-response at its proper time in the behaviour sequence. Inhibition against aggression was believed to develop from enviromental factors; punishment and fear of anticipated punishment lie at the root of inhibitions. Miller (1941) cleared up the confusion as to whether aggression always followed frustration by clarifying that instigation to aggression inevitably follows frustration, but whether instigation is expressed depends on the relative strength of instigation and inhibitions.

The strongest instigation aroused by a frustration, is to acts of aggression directed against the agent perceived to be the source of the frustration, and progressively weaker instigations are aroused to progressively less direct acts of aggression. The greater the degree of inhibition specific to a more direct act of aggression, the more probable will be the occurrence of less direct acts of aggression. If all acts of aggression directed at a given object are prevented, there will be a

tendency for other acts of aggression, not directed at this object, to occur, i.e., displacement in psychoanalytic terminology. This displacement might be toward an innocent object or even toward the self as in masochism, self-martyrdom, and suicide.

Also, the occurrence of any act of aggression is assumed to reduce the instigation to aggression, i.e., catharsis, in psychoanalytic terminology. Conversely, inhibition against aggression is a frustration which increases the instigation to aggression.

4. Bandura and Walters' Social Learning Theory.

Bandura and Walters (1963) stressed learning and experience rather than innate physiology and drive. They were interested in the principles, particularly the reinforcement contingencies, which govern the learning and maintenance of aggressive behaviours. Their theory embraced both hostile (angry) aggression and instrumental aggression; aggressive behaviours may be learned to accomplish goals. They also stressed the role of modeling or imitation learning.

Behaviours are learned, and these may or may not be learned in an aggressive situation. For example, a child might learn to punch by playing punchball with his or her father. The behaviour becomes a part of the behaviour repertoire, and may be used sometimes in response to frustration, and sometimes not. Bandura and Walters argued that if such a behaviour is not employed in a frustrating situation, that it may be as much a result of good discrimination learning which results from differential reinforcement and requires more than simple inhibition, as from anticipation of punishment.

Bandura and Walters suggested that aggressive behaviours are acquired largely through direct reinforcement of aggressive responses, and that an absence of reinforcement will make aggression less frequent. Punishment of aggressive behaviours whilst inhibiting aggression in the presence of the punitive agent, may also provide the child with an aggressive model to imitate. Similarly, engaging in an aggressive act may reduce the immediate

instigation to aggression, but may also increase the probability of future aggression if the behaviour is reinforced.

Bandura and Walters stressed the complexity of the learning enviroment, and question to some degree all of the other three models of aggression described.

2.2.4 Megargee's Personality Types.

Debate exists as to the extent individuals can, or should, control their aggression. Megargee (1982) has suggested that clinical evidence has identified at least six types of violent offender:

1) Undercontrolled Aggressive Type;

2) Chronically Overcontrolled Aggressive Type;

3) normal individuals who have experienced strong provocation, often in conjunction with alcohol;

4) offenders with organic or functional psychopathology;

5) people with high instigation stemming from chronic frustration or oppression;

6) "instrumentally" motivated offenders who use violence to achieve personal, political, or religious goals.

Megargee originally hypothesized that there were two personality types involved in antisocial aggression: the Undercontrolled Aggressive Type and the Chronically Overcontrolled Aggressive Type. The former might commit aggressive responses of any intensity depending on the immediate stimulus situation, whereas the latter would tend to inhibit aggressive responses until they broke through in an extremely assaultive response. Whereas the overcontrolled person's instigation to aggression must be extremely high to overcome his or her inhibitions, the undercontrolled person typically releases his or her aggression before it reaches these levels, but under sufficient provocation can commit an extremely assaultive crime.

Megargee and Mendelsohn (1962) using 12 MMPI scales that purported to measure hostility and/or impulse control, found on those scales where

significant results were obtained, that violent criminals as a group were assessed as less hostile and more controlled than nonviolent criminals and normals. While they acknowledged that one possible, but unlikely, explanation was that the results are a consequence of faking good, they hypothesized that the extremely assaultive person is often a mild-mannered, long suffering individual who buries his resentments under rigid but brittle controls. Under certain circumstances he may lash out, and release all his aggression in one, often disastrous, act. Afterwards he reverts to his usual overcontrolled defenses. They suggested that such a person may be more of a menace than the verbally aggressive, chip-on-the-shoulder type who releases his aggression in small doses (Megargee & Mendelsohn, 1962).

Megargee (1966) using a large number of measures found partial support for the notion that a "murderously assaultive" group of juvenile offenders would be assesed as less hostile, less aggressive, and more controlled than a moderately assaultative group of juvenile offenders, a group of non-assaultative property juvenile offenders, and a group of non-assaultative incorrigible juvenile delinquents (unruly, defiant, unmanageable in the home).

Megargee (1966) used the results of his studies to call into question several aspects of research and treatment of aggression. He questioned, what he called, the typical attribution that physical aggression results from inadequate control, i.e., that the overtly aggressive person has fewer controls than the overtly nonaggressive person. This typical attribution arose, he concluded, because empirical studies necessarily focused on less extreme forms of aggression, whereas his research focused on violent offenders. He called into doubt rehabilitation programmes which had consequently focused on increasing an aggressive person's controls by instituting rewards for control and punishments for aggression; where rehabilitation was considered achieved after a sufficient period of control by a previously aggressive person.

Megargee (1966) also questioned the proposed view of Bandura and Walters (1959) that the intensity of an aggressive response equalled the net strength of instigation minus inhibition. Megargee proposed that in the Chronically Overcontrolled Aggressive Type the intensity of the aggressive response, once instigation is greater than inhibition, is the total strength of instigation, not the net strength.

Megargee, Cook, and Mendelsohn (1967) developed an MMPI scale, O-H (Overcontrolled Hostility), designed to discriminate assaultive criminals from nonassaultive criminals and normals. Four criterion groups were used: i) extremely assaultive group - convicted for one or more of the following crimes: murder, voluntary manslaughter, mayhem, or assault with a deadly weapon; ii) moderately assaultive group - convicted for battery; iii) nonassaultive criminal group - convicted for nonassaultive crimes, primarily robbery and homosexual offences; and iv) a normal group. They used item analysis which required that items show a significant difference between the assaultive and nonassaultive groups, but not show a significant difference between the nonassaultive criminal group and normal group. They concluded that their goal of developing a generalized assaultiveness scale was not realised, but that the O-H scale has some usefulness as an instrument capable of detecting criminals of the overcontrolled assaultive type. This conclusion was based on results of the scale, tested on groups including those diagnosed as "overcontrolled" and "undercontrolled" extremely assaultive criminals.

Lang, Holden, Langevin, Pugh, and Wu (1987) have questioned the existence of Megargee's Chronically Overcontrolled Aggressive Type, especially with respect to murderers. They compared a group of murderers, a group of individuals who assaulted but did not kill their victims, a group of armed robbers, and a group of nonviolent property offending controls; and found that the group of murderers were less hostile and less violent on a number of personality self-report measures. However, using the Eysenck Lie Scale of the Eysenck Personality Questionnaire, they also found that the

same group scored highest in lying, and that the largest effect for lying occurred on the anger and hostility measures. Once lying was controlled for, by statistically adjusting the results using ANCOVA, there were no significant differences between groups on self-report hostility and aggression measures.

Lang et al., (1987) also concluded that the murderers were more defensive as a group, particularly about hostility and violence. They questioned, therefore, the validity of self-report measures with respect to murderers; and further suggested that Megargee's findings result from murderers lying about their aggressiveness. In addition, they found that the group of murderers were no less violent than the other groups using a violence and hostility index, viz., number of violent crimes committed per year = number of violent crimes / (age minus 16, i.e., age of adulthood, minus years in prison).

Whilst these findings are important and appear to place Megargee's findings in doubt, the situation is not simple. The question of whether murderers tend to fit the classification of Chronically Overcontrolled Aggressive Type, or not , can be separated from whether the classification itself is a valid empirical finding. In particular, if the group of murderers is composed of a mixture of chronically overcontrolled, and undercontrolled types, no significant differences might be found between the groups. Lang et al's (1987) findings ask some important questions, and cast doubt on Megargee's hypothesis that murders as a group are chronically overcontrolled. However, they are insufficient to disprove the possibility that some violent individuals may be Chronically Overcontrolled Aggressive Types. Of interest also is whether the overcontrolled and undercontrolled behaviour patterns exist in the population at large , rather than just amongst murderers.

Lang et al., (1987) suggested too that the MMPI Overcontrolled Hostility Scale developed by Megargee et al., (1967), may not be a reliable index since it consists of a combination of diverse items that do not form a

coherent scale or have clear thematic content. Certainly, the 31 item O-H scale has a wide range, and often seemingly unrelated list, of items, e.g., I like mechanics magazines, I have never vomited blood or coughed up blood, I am against giving money to beggars, I almost never dream, etc...

2.2.5 Other Research.

A concept related to Megargee's chronically overcontrolled and undercontrolled aggressive types has been investigated with violent psychiatric patients. Research by Werner, Yesavage, Becker, Brunsting, and Isaacs (1983) suggested that there are possibly two different kinds of violent (physically assaultive) patients in an acute psychiatric unit: one group (80%) reported to have made threatening and hostile verbalisations during their first week on the unit, and a second group (20%) reported to have not. The first group comprised one third of the total individuals reported to have made threatening and hostile verbalisations.

Tanke and Yesavage (1985) used this research to investigate the prediction of violence by comparing two groups of assaultive psychiatric patients: 1) high-visibility group, i.e., violent patients who had provided cues of potential violence in the form of verbal threats; and 2) low-visibility group, i.e., violent patients who had not provided visible cues of potential violence (no verbal threats). They suggested that the best predictors of violence for the two groups would differ. They concluded that the two groups appeared to differ on dimensions assessed by the hostile-suspicious and withdrawal retardation scales of the Brief Psychiatric Rating Scale (BPRS).

Aspects of aggression related to anger are considered in the next section (2.3), which reviews anger including the expression of anger.

2.3 ANGER

2.3.1 Negotiating Conceptual Confusion.

Reference has been made to the term the "AHA Syndrome" (Spielberger

et al., 1985), reflecting the conceptual confusion that has surrounded the concepts of anger, hostility, and aggression. Anger in this study was defined in terms of being an emotional state that consists of feelings of varying intensity. Unfortunately, the history of research into anger has not revealed a convention of such a defintion being adopted, and in part due to this any review of the literature on anger has a conceptual maze to negotiate.

2.3.1.1 Experience and Expression of Anger.

In reviewing the literature on anger a basic dichotomy can be made between the experience and expression of anger. The experience of anger refers to subjective feelings and is synonomous with the definition of anger used in this study. Spielberger et al., (1983) defined the experience of anger in two ways: state anger refers to the level of anger experienced at a given point in time; whereas trait anger refers to individual differences in the frequency that state anger was experienced over time. On the other hand, the expression of anger raises interest in what is done with the experienced anger and has at times in the literature included both internal (cognitive, emotional) events and behaviours. This is conceptually untidy, and it would be simpler to restrict expression of anger to behaviour. This is further commented on below.

Averill (1982) viewed emotions as passions rather than actions: a passion being something a person suffers, with connotations of passivity. Averill interpreted emotions not as self-initiated responses (actions) but rather as responses that somehow happen to the self. Averill did not divorce either the experience or expression of emotion from the social enviroment. This approach of Averill's is useful in considering the distinction between the experience and expression of anger. Experience of anger can be viewed as a passion, and the expression of anger can be viewed as an action or behaviour.

Anger may or may not lead to aggressive behaviour, depending on the

nature of provocation, situational constraints, and the person's preferred style of coping (Novaco, 1975). Anger may be expressed aggressively or non-aggressively (Averill, 1982, 1983), i.e., aggression is one way of expressing anger. Averill explored the expression of anger by categorising actual behaviours reported by subjects in response to getting angry. His categories have been outlined in the definitions section (1.2). Of importance to note is Averill's (1982,1983) finding that the most frequent responses were nonaggressive.

The use of the term "expression of anger" in the literature has been confusing, because at times it has been broken down into two subcategories, expression and suppression of anger. Suppression captures the idea that anger may be consciously experienced but not expressed (which separates it from concepts such as denial or repression where the anger would not be consciously experienced). However, as used in the literature, suppression at times has included some forms of expression of anger, and therefore has included both internal events and behaviours. It is important to separate emotional and cognitive processes from behaviours, for ease of conceptual understanding. Suppression is always accompanied by behaviour. What is implied by the term suppression definitionally, is that the behaviours which accompany suppression of anger are not aggressive, and do not reveal that the person is experiencing anger. However, as used, the term often has included some aggressive behaviours. These are best captured by the term passive-aggressive behaviours, e.g., the silent treatment, sulking, pouting, being uncooperative, which overlaps to a large degree with Averill's subcategory of Direct Aggression: denial or removal of some benefit usually enjoyed by another person. Nonaggressive behaviours which accompany suppression could include being silent, walking away, engaging in calming activities, etc.. Situational factors and the social interaction would help to distinguish aggressive behaviours from nonaggressive behaviours.

The other major point of clarification is that in the literature

expression of anger most often has been used to mean aggressive expression of anger, and has excluded the possibility of nonaggressive expression of anger. Also, it's use usually has excluded passive-aggressive behaviours and Averill's denial or removal of some benefit usually enjoyed by another person.

A useful classification of experience and expression of anger that has appeared in the literature, e.g., Carlson (1981), is the Johari Window, described by Joe Loft and Harry Ingram.

THE JOHARI WINDOW

	Known to self	Not Known to self
Known to others	OPEN (Public self)	HIDDEN ("Blind" self)
Not known to others	SECRET (Private self)	UNKNOWN (Buried self)

The terms expression and suppression are well captured by the categories OPEN and SECRET. The categories HIDDEN and UNKNOWN occur when anger is not consciously experienced. Anger that is known to others is communicated in some way, even if the person is not consciously aware of it (HIDDEN). Anger that is not known to others is suppressed (SECRET), or not consciously experienced (UNKNOWN).

2.3.1.2 Anger-in and Anger-out.

Anger-in and anger-out are concepts first used by Funkenstein, King, and Drolette (1954). In the literature anger-in has usually been used synonomously with suppression of anger, and anger-out with expression of anger, and therefore has the conceptual confusion associated with those terms. Again, the distinction between anger being expressed aggressively or nonaggressively has by and large been side-stepped, and anger-out has

usually been used to mean aggressive expression of anger, and anger-in "nonexpression" of anger.

Funkenstein et al., (1954) investigated the effects of anger on the cardiovascular system, and used categories of feeling reported (predominantly angry/predominantly anxious), and direction of anger (anger-in, anger-out, anger equally outward and inward) for the predominantly angry group. Subjects were assigned to the anger-in category when they reported feeling irritated or annoyed with themselves; and to the anger-out category when they directed anger toward the experimenter. It is of interest that Funkenstein et al., (1954) stated that the anger-in and anger-out strategies were not stable and consistent; the direction of anger expression changed frequently and seemed to be influenced by situational factors.

The constructs of anger-in and anger-out have continued to be used in research into medical disorders. Spielberger et al., (1985) discussed the work of Harburg, Gentry, and colleagues who carried out a research programme on hypertension (Gentry,1972; Gentry, Chesney, Gary, Hall & Harburg, 1982; Gentry, Chesney, Hall & Harburg, 1981; Harburg, Blakelock, & Roeper, 1979; Harburg, Erfurt, Haulenstein, Chape, Schull, & Schork, 1973; Harburg & Haulenstein, 1980; Harburg, Schull, Erfurt, & Schork, 1970). Anger-in and anger-out were used as as a categorical independent variable and subjects were classified on responses to a self-report questionnaire describing hypothetical anger provoking situations. The research showed that elevated blood pressure and hypertension were associated with anger-in, rather than with anger-out, in anger provoking situations. Spielberger et al., (1985) stated that there are a number of problems in the procedures employed in the assessment of anger expression by Harburg, Gentry and colleagues, e.g., hypothetical situations used were relevant to people living in large cities and may not be appropriate for other populations, many subjects would not have experienced the hypothetical situations, and they failed to take into account the frequency

of occurrence of reactions to same or similar situations. These, they claimed, make it difficult to interpret the findings and to extend the procedures to other populations. Also, Spielberger, Krasner, and Solomon (1988) made the important conceptual point that individuals who reported they did not feel angry were classified as anger-in.

Spielberger and his colleagues became interested in measuring the extent to which people express or suppress their anger and set out to develop a scale to do this (Spielberger, 1988; Spielberger et al., 1985; Spielberger et al., 1988).. In measuring the expression/suppression of anger, subjects were required to indicate how they react or behave. Spielberger et al., (1985) defined anger-in as how often angry feelings are experienced but not expressed. Items measuring anger-in were: I withdraw from people; I pout or sulk; I am angrier than I am willing to admit; I am secretly quite critical of others; I boil inside but I don't show it; I tend to harbour grudges that I don't tell anyone about; I keep things in; and, I'm irritated a great deal more than people are aware of. Anger-out was defined as the extent that an individual engages in aggressive behaviours when motivated by angry feelings. Anger-out, so defined, attempted to measure the extent that an individual engages in hostile (angry) aggression. Items measuring anger-out were: I express my anger; I make sarcastic remarks to others; I do things like slam doors; I argue with others; I strike out at whatever infuriates me; I say nasty things; I lose my temper; and, If someone annoys me, I'm apt to tell him or her how I feel.

Anger expression had previously been treated as a unidimensional construct, with low scores equating with anger-in, and high scores with anger-out. However, Spielberger and colleagues discovered anger-in and anger-out to be two independent dimensions. This is further discussed in the assessment section 2.3.2.

Spielberger et al., (1985), and Spielberger et al., (1988) distinguished the above definition of anger-in from the psychoanalytic concept of anger turned inward, directed towards the ego or self. The pyschoanalytic

concept implies that feelings of guilt, rather than anger, will be experienced (Alexander & French, 1948), and with this type of anger-in thoughts, memories, and even the feelings of anger themselves may be repressed or denied; whereas anger-in defined above (suppressed anger) is consciously experienced as an emotional state.

2.3.1.3 Adaptive and Maladaptive Expression of Anger.

Novaco (1975) viewed anger as having both adaptive and maladaptive functions. He summarized the functions of anger as energizing behaviour; disrupting ongoing behaviour; expressing or communicating negative feelings; defending against vulnerability to ego threat; instigating or eliciting antagonism as a learned stimulus for aggression; and discriminating an event as a provocation.

Research into the expression of anger raises the question as to what is healthy, adaptive expression of anger and what is unhealthy, maladaptive expression of anger. Anger-in/suppression has been associated with ill health; anger-out/expression is often considered undesirable, and can result in societal punitive consequences (e.g., prison), relationship breakdown, etc...

The body of research relating anger, hostility, and aggression to ill health is considerable and largely beyond the scope of this review. Anger expression (anger-in and anger-out) has been used in research identifying predictors of common medical disorders including hypertension, coronary heart disease, and cancer. Franz Alexander (1939) postulated a connection between essential hypertension and feelings of anger, including a difficulty in expressing them. The relationship between anger-in specifically and physiological correlates started with Funkenstein et al., (1954); and the work of Harburg, Gentry and colleagues, whose research connected anger-in to elevated blood pressure and hypertension, has already been mentioned.

Another avenue through which research into medical disorders has been related to AHA (anger, hostility, aggression), is via the classification of

the Type-A behaviour pattern, first identified by Friedman and Rosenman (1959), and its relationship to cardiovascular diseases. The Type-A pattern has been defined as a characteristic action-emotion complex which is exhibited by those individuals who are engaged in a relatively chronic struggle to obtain an unlimited number of poorly defined things from their enviroment in the shortest period of time and, if necessary, against the opposing effects of other things or persons in this same enviroment (Friedman, 1969). Glass (1977) classified the Type A behaviour pattern into three principal components: 1) competitive achievement striving; 2) exaggerated sense of time urgency; 3) aggressiveness and hostility. The Type-A pattern is contrasted with the Type-B pattern which is made up of individuals who tend to show the opposite pattern of relaxation, serenity, and lack of time urgency. An important example of the research is that of Rosenman, Brand, Jenkins, Friedman, Straus and Wurn (1975), who found that men classified as Type-A were more than twice as likely to develop coronary heart disease as those classified as Type-B. Williams and Jenkins (1986), and Krasner (1986), using Spielberger and colleagues' measures of trait anger, anger-in and anger-out, found that Type-A's scored significantly higher than Type-B's on experience of angry feelings (trait anger), and anger-out, but found that the two types did not differ significantly in anger-in.

Tavris (1982a, 1982b) stated that one of the assumptions most prevalent in the anger business is that physical or verbal ventilation of anger is basically healthy, and suppressed hostility medically dangerous. She related the assumption that physical or verbal ventilation of anger is basically healthy, to the psychodynamic concept of catharsis, the idea that aggression reduces the level of anger a person is experiencing. Tavris believed that most people who are prone to give vent to their rage get angrier, not less angry. However, she acknowledged that for some people in some situations expressing anger (i.e., behaving aggressively) is cathartic (reduces the level of anger experienced). Equally, however, nonaggressive

responses for some people in some situations are cathartic. Tavris proposed that cartharsis is related to learning: if aggression is followed by decreased arousal it is reinforced, whereas if aggression is followed by prolonged or increased arousal this would act as a punisher and the behaviour would be less likely to occur in the future.

Tavris drew much of her above proposals from the work of Hokanson. Research by Hokanson (1961a, 1961b), and Hokanson and Burgess (1962) indicated a relationship between anger expression and vascular processes. These experiments, for example, found sex differences in experimental situations when individuals were subjected to insult by an equal or low status perpetrator: arousal as measured by blood pressure and heart rate on average decreased to normal levels more quickly for males who responded aggressively; and on average decreased to normal levels more quickly for women who responded with friendliness. Hence, aggression reduced arousal for men, whereas friendliness did so for women. However, aggression towards a high status perpetrator may be arousal provoking for both men and women. Clearly, using measures of blood pressure and heart rate themselves do not tell us whether state anger has increased or decreased. Arousal can indicate other feelings such as anxiety or guilt, as well as anger.

Hokanson (1970) argued that principles of learning are important, and proposed: 1) Overt aggression does not inevitably lead to either physiological tension reduction or a reduction in subsequent aggression. Only when aggression is learned as an instrumental behaviour towards a particular target does it acquire tension-reducing concomitants. Moreover, under these instrumental circumstances, one would expect aggressive behaviour to be more likely to occur in subesequent threatening encounters. 2) Under interpersonally provoking circumstances, counter-responses other than aggressive ones can also have physically tension-reducing concomitants. The common mechanism for the observed tension-reducing effects of friendly or self-punishing counter-responses to others'

aggression was the learned instrumentality of these behaviours in reducing others' aversive behaviour.

Hokanson (1970) therefore speculated that in a culture or family where violent reaction to instigation is encouraged, and the violence is successful in removing a frustration, one would expect that aggression would have a temporary arousal-reducing effect, and that the likelihood of future violence would be enhanced. On the other hand, in a culture or family where nonaggressive counter-responses to instigation are learned, these too would have arousal reducing properties.

Hokanson's research from a social learning perspective was in line with Bandura's (1973) belief that the physiological tension level is determined not only by what one does, but also by what one thinks. Bandura recommended that studies should include as an independent variable, subject beliefs regarding the consequences of anger expression.

The above proposals of Hokanson and Tavris, as well as Bandura's social learning theory, suggest that such things as learning history, situational cues, outcome expectancies, behaviour repertoire, social skills, self-efficacy, and assertiveness etc... are important in determining both how angry a person becomes, and how that anger will be expressed in any given situation. For example, Lang et al., (1987) stated that descriptive accounts suggest that social skill deficits and a lack of assertiveness may be significant contributing factors to assaultiveness. Toch (1972) argued that most violent-prone individuals can be classed as deficient in verbal and social skills and that this lack of social skills not only produces violence as a substitute for talk, but may also provoke violent outbursts towards the individual by people who are unable to reach him/her in more conventional ways. Behavioural theorists, e.g., Abel, Becker, Blanchard, and Djenderedjia (1978); Barbaree, Marshall, and Lanthier (1979) maintain that skills deficits including an inability to control anger and hostility, play a major role in predisposing an individual to committing sexual assaults. Novaco (1975) proposed that a person having skills to respond in

nonantagonistical ways will have a lowered probability for anger arousal.

2.3.1.4 Other Aspects of Anger.

One notion that needs introduction is that anger is sometimes described in the psychological/psychiatric literature as a secondary emotion; that primary emotions lie behind anger. These may be many and varied, e.g., feeling trapped, ignored, blamed, demeaned, attacked, a loss of control, interrogated, etc... Anger from this viewpoint is seen as a consequence or reaction to the primary emotion.

Carlson (1981) has suggested the concept of an unresolved anger fund. The unresolved anger fund builds up with each new incident that provokes angry feelings, to the extent that each experience of anger is not resolved.

Also of interest is that some anger management courses use the concepts of "stuffing" anger and "escalating" anger. The stuffer suppresses his or her anger but holds on to it (brooding etc..), whereas the escalator on the other hand quickly over-reacts and expresses anger with aggressive behaviour. The subject of anger management is well explored, and books include those of Novaco (1975), and Goldstein and Rosenbaum (1982). Patterson (1985), has also discussed escalation in the context of social interactions, particularly family dyads where a pattern of escalating irritable initiations, reactions, and counter-reactions occur.

2.3.1.5 Conclusion.

In drawing together the threads of the hypotheses and research on anger in the literature it is possible to view expression of anger as either adaptive or maladaptive. If this were done adaptive expression of anger would consist of those behaviours which reduce levels of arousal (blood pressure, heart rate); reduce the level of state anger experienced; and which are either nonaggressive or aggressive but socially acceptable. Adaptive expression of anger would then involve recognition of primary emotions and be aimed to be a part of the goal to resolve those emotions in

a constructive and creative manner. This would include the cognitive areas of cognitive restructuring and attribution theory. Adaptive expression of anger would include or could even be defined as a sub-class of assertive behaviour. Assertive behaviour is interpersonal behaviour involving appropriate expression of thoughts and feelings, both positive and negative; it is direct and honest but takes into consideration the rights and feelings of others; and involves effective communication with a view to achieving goals (Carr & Binkoff, 1981). Assertive behaviour is thought to benefit an individual phenomenologically by experiencing feelings of increased self-confidence and well being; enable an individual to achieve more satisfying, more intimate relationships with others; and enable an individual to accomplish goals not directly related to interpersonal relationships as such (Carr & Binkoff, 1981).

Adaptive expression of anger could include some behaviours associated with anger-in/suppression. For example, angry feelings may be experienced by a person who chooses to remain silent or to walk away; and the employing of such behaviours leads to decreased arousal and decreased levels of anger experienced. This implies a choosing of the behaviour from the behaviour repertoire when other behaviours are possible, e.g., confrontation; rather than a reaction, an expression of passivity, an absence of social skills in the behaviour repertoire, or a lack of assertiveness.

Maladaptive expression of anger would consist of those behaviours which maintain or increase levels of arousal, maintain or increase levels of state anger, or are socially unacceptable aggressive behaviours. Maladaptive expression of anger would include nonaggressive behaviours like servility, acquiescence or passivity (which may reduce anxiety but maintain state anger); direct, indirect and displaced aggression including passive- aggressive behaviours e.g., the silent treatment.

The above description of maladaptive expression of anger would include those behaviours that are included in the measurement of anger-in by

Spielberger et al., (1985). Also, maladaptive expression of anger would increase the unresolved anger fund proposed by Carlson (1981).

2.3.2 Assessment of Anger.

2.3.2.1 Brief Review.

Comprehensive reviews of measures to assess anger do not exist. Biaggo (1980); and Biaggo, Suplee, and Curtis (1981) reviewed four anger scales; Edmunds and Kendrick (1980) considered several anger scales in their review of measures of aggressiveness; and Spielberger et al., (1983); Spielberger et al.,(1985); and Spielberger et al., (1988) provided brief reviews as introductions to their research. The following is not an attempt to provide a comprehensive review of the assessment of anger and draws primarily on the reviews of Spielberger and his colleagues.

The early assessment of anger and hostility was based on clinical interviews, behavioural observations, and projective techniques such as the Rorschach inkblots and the Thematic Apperception Test. Beginning in the 1950's a number of self-report psychometric scales were developed including those of Buss and Durkee (1957); Caine, Foulds and Hope (1967); Cook and Medley (1954); and Siegel (1956). These scales tended to confound anger and hostility as defined by Spielberger and colleagues (Spielberger et al., 1985). The phenomenological experience of anger, i.e., angry feelings, had by and large been neglected in the psychological research until three anger scales appeared in the 1970's. These were the first attempts to assess anger as distinct from hostility. They were the Reaction Inventory (Evans & Strangeland, 1971); the Anger Inventory (Novaco, 1975); and the Anger Self Report (Zelin, Alder, & Meyerson, 1972). These three scales and the Buss-Durkee Hostility Inventory were reviewed by Biaggo (1980), and evaluated and compared with respect to reliability and validity by Biaggo et al., (1981). Siegel (1985) developed a self-report inventory, the Multidimensional Anger Inventory, to measure multiple dimensions of anger, namely frequency, duration, magnitude, hostile

outlook, range of anger provoking situations, and mode of expression.

Spielberger et al., (1985) considered that these scales were limited for assessing anger as a psychological construct: that they were not adequate for distinguishing between anger as an emotional state (angry feelings), and individual differences in anger-proneness as a personality trait. Spielberger et al., (1985) stated that the Reaction Inventory and Anger Inventory confounded angry feelings with situational determinants of anger reactions; and that the Multidimensional Anger Inventory did not appear to evaluate the intensity of angry feelings and only indirectly assessed how often they occur.

In addition to these scales several other scales exist which measure anger in response to hypothetical situations. Endler and Hunt (1968) constructed a situation-specific and response-specific inventory of hostility, the S-R Inventory of Hostility. Endler and Hunt considered anger, aggression, and hostility to be synonomous. Catchlove and Braha (1985) developed an Awareness and Expression of Anger Indicator which uses a single hypothetical situation. Knight, Ross, Collins, and Parmenter (1985) developed the Subjective Anger Scale, an interactionist situation referenced measure designed to assess the disposition to feel angry in general and clinical populations. They selected nine situations based on applicability and comprehensibility to a diverse range of subjects; used four modes of response, i) feel irritated, ii) feel tense, iii) feel like shouting, iv) feel angry; and employed a five point scale from very much, to, not at all.

Spielberger and colleagues developed two anger scales, the State-Trait Anger Scale (Spielberger 1980, Spielberger et al., 1983) and the Anger Expression Scale (Spielberger et al., 1985). The latter was modified and the two scales combined to form the State-Trait Anger Expression Inventory or STAXI (Spielberger,1988; Spielberger et al., 1988). Spielberger (1988) explained that the two scales developed out of two separate programs of research: anger experience (state-trait) from

research focusing on the definition and development of measures of anxiety, curiosity and anger as fundamental emotions and personality traits; and anger expression from the identification of predictors of common medical disorders including hypertension, coronary heart disease, and cancer. These scales are discussed more fully below.

The state-trait distinction has also been used in the Zuckerman Inventory of Personal Reactions (Zuckerman, 1977; Zuckerman & Mellstrom, 1977). This situation specific scale discussed by Knight et al., (1985) measures five classes of affective response, one being anger and aggression. Knight et al., (1985) stated that the major obstacle to the more widespread use of this scale is that it was constructed using student samples.

2.3.2.2 The State-Trait Anger Scale.

Arising from research into anxiety Spielberger (1966, 1972) developed the state-trait distinction, terms first used by Cattel and Sheier (1961). The State-Trait Anger Scale or STAS (Spielberger et al., 1983) distinguished between state anger, with measures of intensity at a particular time, and trait anger, with measures of frequency. State anger (S-anger) was defined as an emotional state or condition that consists of subjective feelings of tension, annoyance, irritation, fury and rage, with concomitant activation or arousal of the autonomic nervous ststem. Further, it was assumed that S-anger varies in intensity and fluctuates over time as a function of perceived affronts or injustice, or frustration resulting from the blocking of goal-directed behaviour.

Trait anger (T-anger) was defined in terms of individual differences in the frequency that S-anger was experienced over time, i.e., predisposition to experience anger. It was assumed that persons high in T-anger were more likely to perceive a wide range of situations as anger provoking (e.g., annoying, irritating, frustrating), and to respond to such situations with elevations in S-anger. In addition to experiencing the arousal of S-anger

more often, persons high in T-anger were expected to experience more intense elevations in S-anger whenever annoying or frustrating conditions were encountered. The State-Trait Anger Scale was analagous in conception and similar in format to the State-Trait Anxiety Inventory developed by Spielberger, Gorsuch and Lushene (1970).

Factor analysis was used in the development of the scale, which suggested a single factor for S-anger, i.e., a unitary emotional state that varies in intensity; and two factors for T-anger, namely angry temperament (T-anger/T), and angry reaction (T-anger/R) (Spielberger et al., 1983). Consequently, the STAS was constructed with two subscales for T-anger. Angry temperament described individual differences in disposition to express anger without specifying any provoking circumstances, and angry reaction described anger responses in situations that involve frustration and/or negative evaluations. The STAS is a highly homogeneous and unambiguous measure of the emotion of anger, is supported by encouraging validity data, and is the only anger inventory which has comprehensive norms and good psychometric credentials (Knight et al., 1985).

The STAS, which was designed to measure experience of anger, can not be expected to differentiate between individuals with little anger from individuals whose anger is not consciously experienced through the employment of such defence mechanisms as repression, denial, and projection. Both groups of individuals would consciously experience low levels of anger, but in other respects may be quite different. For example, psychodynamic theory would suggest that individuals with little anger experience significantly less depression than individuals whose anger is not consciously experienced.

2.3.2.3 The Anger Expression Scale.

The Anger Expression Scale (Spielberger et al., 1985) has already been introduced. It was designed to measure the extent to which people express (anger-out) or suppress (anger-in) their angry feelings in terms of

reactions or behaviours. Anger-in was defined as how often angry feelings are experienced but not expressed; anger-out as the extent that an individual engages in aggressive behaviours when motivated by angry feelings.

Anger expression had been implicitly defined by Funkenstein et al., (1954), Harburg et al., (1973), and Gentry et al., (1982) as a unidimensional construct, equating low scores with anger-in and high scores with anger-out (Spielberger et al., 1985). In developing the Anger Expression Scale, Spielberger and colleagues assumed that anger expression could most meaningfully be defined in terms of a single bipolar dimension, for which the behaviours ranged from strong inhibition or suppression of angry feelings, to extreme expression of anger toward other persons in the enviroment (Spielberger et al., 1985). The goal was a continuous measure, unlike the earlier categorical measures, of individual differences in direction and extent to which anger was suppressed or expressed.

However, a very important discovery was that despite attempting to develop a unidimensional bipolar measaure of anger expression, factor analysis suggested that the anger expression items were tapping into two independent dimensions. On the basis of the content of the items loading on these factors, they were labelled anger-in and anger-out. The Anger Expression (AX) Inventory consists of 20 items, 8 forming an AX/In subscale, 8 forming an AX/Out subscale, and 4 other items. Spielberger et al., (1988) cited unpublished research by Johnson (1984), and Pollans (1983), which produced essentially zero correlations between the AX/In and AX/Out subscales for both males and females in large samples of high school and college students. Spielberger et al., (1988) concluded that the two subscales are empirically independent as well as factorally orthogonal.

The measurement of anger-in (AX/In) and anger-out (AX/Out) by Spielberger et al., (1985) is immersed in the conceptual confusion outlined at the beginning of this chapter. Anger-out was defined by Spielberger et al., (1985) as hostile (angry) aggression and the AX/Out items are intended

to measure this. No distinction was made between adaptive and maladaptive expression of anger, and nonaggressive expression of anger was excluded. Of the eight items in the AX/Out subscale two , "I express my anger", and "If someone annoys me, I'm apt to tell him or her how I feel", could capture adaptive and/or nonaggressive responses, as well as aggressive behaviour.

The anger-in subscale (AX/In) is also beset by conceptual difficulties. Firstly, it includes both internal (cognitive/emotional) events, e.g., "I boil inside", "I am secretly critical of others", and behaviours, e.g., "I withdraw from people". Secondly, it confounds suppression of anger with passive-aggressive expression of anger; the item, "I pout or sulk", is more easily seen as passive-aggressive behaviour than suppression. Thirdly, no distinction was made between adaptive and maladaptive reactions and behaviours, and the possibility that anger-in at times could be adaptive in terms of reduced levels of arousal and decreased angry feelings was excluded.

However, the factor loadings suggest that the AX/In and AX/Out subscales do tap into meaningful constructs. AX/Out appears to measure aggressive expression of anger (aggression), whereas AX/In appears to measure maladaptive expression of anger (behaviours) along with concomitant internal cognitive/emotional events.

2.3.2.4 The Anger Control (AX/Con) Subscale of the AX Scale.

The original Anger Expression Scale (AX) also included three items loading on both the anger-in and anger-out factors, which appeared to be related to the control of anger (Spielberger et al., 1985). These three items were, "I keep my cool", "I control my temper", and, "I calm down faster than most other people". Factor analysis showed that these loaded on a third factor suggesting anger control and/or resistance to becoming angry. Subsequently, a separate subscale called anger control (AX/Con) was developed, and the 20 item AX inventory was extended to 24 items

comprising the three subscales of anger-in, anger-out, and anger control (Spielberger, 1988; Spielberger et al., 1988).

The AX/Con subscale was derived from a pool of items referring to dictionary definitions of control and idioms pertaining specifically to the control of anger (Spielberger et al., 1988). The final eight items were selected on the basis of factor analysis, which revealed one large factor and several small factors. Five items predominantly refer to successful control of anger and imply not behaving aggressively, as opposed to attempted control: "I keep my cool", "I control my behaviour", "I control my angry feelings", "I control my temper", and, "I stop myself from losing my temper". Two items refer to tolerance and patience: "I try to be tolerant and understanding", and, "I am patient with others". The eigtht item is, "I calm down faster than most other people". The subscale most probably measures successful control of anger, i.e., not behaving aggressively, with the other items tapping into correlated variables.

Spielberger et al., (1988) cited the following unpublished research in relation to the AX/Con subscale. Pollans (1983) administered the early AX scale to college students and found evidence for an anger control factor for males, but not females, for whom anger control and anger-out were loaded on the same factor. This suggests that college women who overtly express anger have stronger control over their angry feelings (Spielberger er al., 1988).

Krasner (1986) found significant negative correlations between AX/Con and T-anger for both males ($r = -0.64$) and females ($r = -0.55$); and significant negative correlations between AX/Con and AX/Out for both males ($r = -0.59$) and females ($r = -0.58$); whereas correlations of AX/In with both AX/Out and AX/Con were essentially zero for both sexes.

Krasner (1986) found that Type-A individuals scored significantly lower than Type-B individuals on AX/Con suggesting that Type-A individuals have less control over their anger than Type-B individuals.

Solomon (1987) administered the AX Scale, and T-anger subscale along

with two new scales, the Rationality/Emotional-Defensiveness (R/ED) Scale which assesses the defensive use of rationality to deny and/or repress feelings, and the Hopelessness/Depression (H/D) Scale which measures the extent to which specific events or experiences result in chronic feelings of hopelessness and depression. Solomon found significant positive correlations of the AX/Con subscale with the R/ED Scale ($r = 0.58$ for males, $r = 0.57$ for females) which he interpreted as suggesting that individuals who invested a great deal of energy in controlling the expression of anger were also likely to use over-rationality, repression, and denial as defenses for controlling their emotions. Significant negative correlations of the R/ED Scale with the T-anger and AX/Out subscales suggested that those who use over-rationality experience and express little anger. Interestingly, he also found significant positive correlations of the T-anger and AX/In subscales with the H/D Scale suggesting that those who experienced more anger but who suppressed it, felt more hopeless and depressed (Spielberger et al., 1988).

2.4 COGNITIONS.

As stated earlier, the relationship between physiological, behavioural, emotional, and cognitive events is complex and to gain a full understanding of any one, the others need to be taken into account. This study is not primarily interested in cognitions except via restraint, which is defined as being cognitively mediated. The role of cognitions has already been discussed with respect to restraint, particularly the role of cognitions as disinhibitors. Although little is included on cognitions, their importance is not underestimated.

Cognitions also play a role in anger. Bandura's (1973) social learning analysis considered the role of cognitive processes with respect to anger expression and suppression. Novaco (1977) viewed anger as an emotional response to provocation that is determined by three modalities of personal variables: cognitive, somatic-affective, and behavioural. At the cognitive

level, Novaco (1977) believed anger to be a function of appraisals, attributions, expectancies, and self-statements that occur in the context of provocation. The importance of assertiveness, self-efficacy, and social skills in relation to adaptive expression of anger have also been mentioned briefly earlier, and cognitions play an important role in the understanding of these constructs.

Theorists such as Novaco (1975) stressed the importance of cognitions in the relationship between anger and aggression. Cognitive restructuring was central to Novaco's (1975) treatment of anger problems, which included reappraisal of self-statements and challenging irrational beliefs about the necessity for success, intolerance of mistakes, unreasonable expectations of others, and the necessity for retaliation as in rational-emotive therapy (Ellis, 1967).

One issue that has appeared in the literature and which is vigorously disputed is the debate on primacy of affect versus primacy of cognitions. This is highlighted by the ongoing debate between Lazarus and Zajonc. Zajonc (1980) began with the general hypothesis that affect and cognitions are separate and partially independent systems and that although they ordinarily function conjointly, affect could be generated without a prior cognitive process. Zajonc traced this idea back to Wundt. Patterson (1985) related this to the work of Toch (1972) and Berkowitz (1978) where both investigators noted a flash phenomenon (of intense anger). Lazarus (1982) disagreed with Zajonc, arguing that an emotional experience grows out of ongoing transactions with the enviroment that are evaluated, and that therefore cognitive activity is a necessary precondition to emotion, people must comprehend that their well-being is implicated in a transaction, for better or worse.

So, although this study does not investigate directly the role of hostility (defined primarily in terms of attitudes), or of cognitions other than via restraint of aggressive desires, their importance is recognised. It is considered that both emotions and cognitions play a vital role in the

processes leading to aggressive behaviour.

2.5 SELF-CONTROL AND RELATED CONCEPTS.

Restraint, a cognitively mediated effort to combat the urge or desire to behave aggressively, is closely related to such notions as self-control, impulse-control, responsibility, and will-power. The area is a minefield philosophically and psychologically, and cannot be resolved in this study. The subject is only introduced here, it's theoretical importance in relation to this study noted, and it's complexities recognised. In some measure much of the subject matter of psychology investigates and develops our understanding of what is self-control.

Traditionally, concepts of self-control and willpower appeared to have implications of moral worth, and that a person had unrestricted free will to choose his or her behaviour. Carr and Binkoff (1981) stated that the notion of self-control was introduced to Western Civilisation by the Greeks: an individual required both intelligence and inner strength to achieve the ideal state of self-control. Goldfried and Merbaum (1973) viewed self-control as a process through which an individual becomes the principal agent in guiding, directing, and regulating those features of his own behaviour that might eventually lead to desired positive consequences.

Self-control in the psychological literature has been often related to skills/skills deficits, with intervention strategies designed to teach skills. For example, Carr and Binkoff (1981) stated that such interventions assume that self-control is a set of learned skills, not an inherent personality trait, and discussed three such skills; relaxation, cognitive restructuring, and assertion.

Ainslie (1975) reviewed a broad literature on impulsive behaviour and impulse control, and developed a behavioural theory of impulsiveness and impulse control. Impulsiveness, he suggested, is best accounted for by the hyperbolic curves that have been found to describe the decline in effectiveness of rewards as the rewards are delayed from the time of

choice, i.e., smaller immediate rewards outweigh larger delayed rewards. Therefore delayed rewards from the moment of choice causes them to lose effectiveness, and impulse control has to do with the ability to devise ways of committing oneself to get past the smaller immediate rewards.

Also, Marlatt (1985a), in discussing self-control and addiction, stated that self-control theorists have emphasized that the individual is capable of excercising control and assuming responsibility for the process of changing an addictive habit.

CHAPTER 3. INTRODUCTION TO THE STUDY.

3.1 PURPOSE

This study is an attempt to continue to unravel what Spielberger et al., (1985) called the AHA Syndrome (the anger, hostility, aggression syndrome), by developing a simple measure of restraint of aggressive desires, and investigating: 1) the relationship between restraint of aggressive desires and aggression; 2) the relationship between anger and restraint of aggressive desires; and 3) the interaction of anger and restraint of aggressive desires in relation to aggression. The Restraint of Aggressive Desires (ROAD) scale was developed, as well as the Self-report Aggressive Behaviour Questionnaire (SABQ). Some of the psychometric properties of these two measurement instruments were also investigated, as well as the relationship between the restraint of aggressive desires and anger control, as measured by the ROAD scale and the AX/Con subscale of the State-Trait Anger Expression Inventory (STAXI; Spielberger et al., 1988).

The study used the following variables to investigate the relationships mentioned above: restraint of aggressive desires; frequency of aggressive behaviour; intensity of aggressive behaviour; trait anger as measured by frequency of experiencing angry feelings; anger-in; anger-out; and anger control. The study considered general measures without reference to situational factors and used both a student and prisoner sample. Situational factors are very important but were beyond the scope of this exploratory study.

3.2 CONCEPTUAL ISSUES

3.2.1 Anger.

The anger variables used in this study were the experience of anger over time (trait anger), and the expression of anger variables, anger-in, anger-out, and anger control as measured by the STAXI. The expression of

anger is clouded by conceptual confusion as outlined above in the literature review, and the concepts of adaptive and maladaptive expression of anger have been used to help negotiate this confusion. Anger-in and anger-out may be both at times either adaptive (which would reduce levels of state anger), or maladaptive (which would maintain or increase levels of state anger). It was expected that individuals who experience higher levels of trait anger, would on average exhibit higher levels of both anger-in and anger-out, than individuals who experience lower levels of trait anger.

In this study the State-Trait Anger Expression Inventory (STAXI) was used which contains subscales of anger-in (AX/In) and anger-out (AX/Out). However, anger-out as measured by the AX/Out subscale was developed to measure the frequency that individuals engage in aggressive behaviour when motivated by angry feelings, i.e., hostile aggression; and anger-in as measured by the AX/In subscale, by its item content, appears predominantly to measure maladaptive suppression of anger. Spielberger and colleagues found that AX/In and AX/Out were independent. To test whether this occurred with the two samples in this study, the AX/In, AX/Out correlation coefficients were calculated.

A significant positive correlation between trait anger and both AX/In and AX/Out was expected. If AX/In and AX/Out primarily measure maladaptive suppression and expression of anger, the presence of high levels of trait anger would be expected to maintain or increase levels of state anger. Spielberger et al., (1983) assumed that individuals with high trait anger would experience arousal of state anger more often. Johnson (1984) found a significant positive correlation between T-Anger (the trait anger subscale of the STAXI) and both AX/In and AX/Out, with the AX/Out, T-Anger correlation being considerably stronger. These correlations were carried out in this study with the two samples used and the results discussed.

One of the two samples used in this study was a prisoner sample. Prisoners were categorized (see section 5.3.7), one category being a violent

offender group. It was expected that the violent offender group would display higher levels of trait anger (as measured by T-anger), anger-in (as measured by AX/In), and anger-out (as measured by AX/Out), and lower levels of anger control (as measured by AX/Con) than other offender groups.

3.2.2 Restraint of Aggressive Desires, and Aggression.

Megargee's algebra of aggression described in section 2.2.2 includes four broad factors that interact to determine the strength of an aggressive response: instigation to aggression; habit strength; inhibitions against aggression; and situational factors. Instigation to aggression is the sum of all internal factors which motivate a person to behave aggressively. The urge or desire to behave aggressively can be equated with instigation to aggression, and restraint of aggressive desires can be seen as a measure of the effort to overcome instigation to aggression. Inhibitions against aggression are the sum of all internal factors opposing a particular aggressive act directed at a target, and restraint of aggressive desires can be seen as a component, or subset of components of inhibitions against aggression. Restraint implies a commitment or motivation to oppose instigation, irrespective of whether or not the necessary skills to maintain that commitment exist. Adaptive social skills could also act as inhibitions against aggression, but may well not be independent of restraint.

Restraint theory as developed in the eating disorders literature starts with the premise that some individuals consciously attempt to combat a desire to behave (eat). Restraint theory proposes that disinhibition periodically occurs whereby self-control is temporarily released or interferred with. Further, counter-regulation, suggests that high restrainers, once disinhibition occurs, "overindulge" in the behaviour (eating), whereas low restrainers do not. This is paralleled in the addiction literature by what Marlatt (1978) called the abstinence violation effect. An individual violates a self-imposed abstinence rule (disinhibition) which he or she attributes to internal causes such as a lack of will-power, and

then relapses and the behaviour goes out of control (overindulgence). A person without such a self-imposed rule would not exhibit such a pattern of behaviour.

Megargee has proposed a similar pattern with his Chronically Overcontrolled Aggressive Type (see section 2.2.4). Such a person restrains the desire to behave aggressively until disinhibition occurs when aggressive behaviour occurs in an extremely assaultive response. Restraint theory would also suggest that, on the other hand, low restrainers when they aggress would not "overindulge" or go out of control.

Aggression and eating, however, differ in an important respect. Eating is a behaviour which needs to occur regularly for physiological reasons and Nisbett (1972) proposed the existence of a homeostatically defended set-point of weight. Periods of abstinence normally increase the desire or urge to eat (instigation). In the area of aggression essentially two opposing views exist. Firstly, that instigation to aggression is either innate or unavoidable, as with Lorenz's ethological approach, Freud's psychoanalytic approach, and the Yale group's frustration-aggression hypothesis where instigation is unavoidable as everyone experiences frustrations at times; and that abstinence from aggression increases the level of instigation to aggression. If this is the case the predictions of restraint theory would be expected to hold up. Secondly, that instigation to aggression is not innate or inevitable but is a learned phenomenon, which fits more closely with Bandura and Walters' social learning theory. The implications of this second view of instigation to aggression, in relation to restraint and aggression are more complex. The presence of instigation to aggression would be necessary for restraint theory to be meaningful, and in this second view abstinence from aggression may or may not increase the level of instigation. For individuals who experience instigation to aggression, or for those individuals in situations and social contexts where instigation is experienced, abstinence from aggression may or may not increase the level of instigation and the likelihood of disinhibition.

Further, adaptive behaviours (often nonaggressive) would be expected to reduce the level of instigation to aggression (see section 2.3.1.5).

Megargee has described, amongst others, two types of violent offender: the Undercontrolled Aggressive Type, and the Chronically Overcontrolled Aggressive Type. Restraint theory would suggest that these two types differ on measures of restraint, and measures of intensity and frequency of aggressive behaviour. The Undercontrolled Aggressive Type would exhibit below average levels of restraint, and frequently behave aggressively; whereas the Chronically Overcontrolled Aggressive Type would exhibit considerable restraint, but occasionally disinhibit and behave aggressively with high intensity. However, a general measure of restraint of aggressive desires without taking levels of instigation to aggression into account, would be expected to fail to predict the two types in the general population. Firstly, both types would be expected to exhibit moderate to high levels of instigation to aggression. Low restraint scores alone would fail to distinguish individuals with high instigation and low restraint, from individuals with low instigation and low restraint. High restraint scores alone would fail to to distinguish individuals with high instigation and high restraint, from individuals with low instigation and high restraint. Secondly, the aggressive behaviours might occur only in specific situations/social contexts and a general measure of restraint might be insensitive to this.

At each level of restraint it is conceivable that levels of instigation to aggression will also vary. Perhaps the following is possible. High restrainers can be individuals who have high levels of instigation to aggression, and therefore display low frequency and high intensity of aggressive behaviour (Megargee's overcontrolled type); or be individuals with low levels of instigation to aggression (behaviour repertoire containing adaptive skills to lower instigation) and therefore display very low frequency of aggressive behaviour. Low restrainers can be individuals who have high levels of instigation to aggression, and therefore display

high frequency and variable intensity of aggressive behaviour (Megargee's undercontrolled type); or be individuals with low levels of instigation to aggression, and therefore display low-moderate frequency and low intensity of aggressive behaviour. In table form this scenario would look like this:

TABLE ONE: Predicted Levels of Frequency and Intensity of Aggressive Behaviour for Different Combinations of Restraint of Aggressive Desires and Instigation to Aggression.

		INSTIGATION TO AGGRESSION	
		Low	High
RESTRAINT OF AGGRESSIVE DESIRES	Low	low-moderate frequency low intensity	high frequency variable intensity
	High	low frequency variable intensity	low frequency high intensity

3.2.3 Anger and Aggression.

3.2.3.1 The Experience of Anger and Aggression.

The experience of anger may or may not lead to instigation to aggression (Averill, 1982; 1983). The definition of hostile (angry) aggression is aggressive behaviour motivated by anger. Therefore, by definition, anger is a measure of instigation to hostile aggression, and a partial measure of total instigation to aggression. It follows logically that, although not all anger leads to aggression and not all aggression is motivated by anger, a positive correlation ought to exist between individuals' levels of trait anger and individuals' total instigation to

aggression, as well as between individuals' trait anger and individuals' total aggressive behaviour (i.e., hostile plus instrumental aggression). An individual with high levels of trait anger would be expected to be less likely regularly to employ adaptive behaviours (which would reduce the levels of state anger and therefore levels of instigation to aggression), and more likely to employ maladaptive behaviours (which maintain or increase state anger and therefore instigation to aggression).

3.2.3.2 The Expression of Anger and Aggression.

The relationship between the expression of anger and aggression is not explored in this study, except for the relationship between AX/Out and the frequency of aggressive behaviour measure in the Self-report Aggressive Behaviour Questionnaire (SABQ), which is explored in section 4.2.2 and will not be repeated here.

3.2.4 Restraint of Aggressive Desires, and Anger.

3.2.4.1 Restraint of Aggressive Desires and The Experience of Anger.

There is no obvious relationship between restraint of aggressive desires and the experience of anger (trait). In section 3.2.2 it was stated that at each level of restraint it is conceivable that levels of instigation to aggression will also vary. If trait anger is a partial measure of instigation to aggression, it is conceivable that individuals could have high restraint of aggressive desires and either high or low levels of trait anger, or low restraint of aggressive desires and either high or low levels of trait anger. Perhaps the least likely is high restraint and low trait anger, but such an individual could make an effort to resist desires to be aggressive, and use adaptive behaviours to reduce levels of state anger. Based on self-report this combination could also represent individuals who deny to an extent their anger, but acknowledge efforts at control.

3.2.4.2 Restraint of Aggressive Desires and The Expression of Anger: Anger-in and Anger-out.

No simple relationship is expected between styles of expression of anger (anger-in and anger-out), and restraint of aggressive desires. It might be expected that anger-in is positively correlated with restraint of aggressive desires, and that anger-out is negatively correlated with restraint of aggressive desires. But if anger-in and anger-out are independent then such a simple result would be inadequate as a total explanation of the relationship, and of particular interest would be the level of restraint demonstrated by those individuals who have high levels of both anger-in and anger-out. Also, it is likely that without considering instigation to aggression, that the relationship between the expression of anger and restraint of aggressive desires will not be particularly meaningful.

AX/In and AX/Out are independent so 2x2 ANOVAs using above and below average AX/In, AX/Out scores, with restraint of aggressive desires as the dependent variable were carried out as an exploratory exercise using both the student and prisoner samples.

3.2.4.3 Restraint of Aggressive Desires and Anger Control.

Subsequent to this study being started the STAXI has been published (Spielberger, 1988; Spielberger et al., 1988) with the anger control subscale (AX/Con). Anger control differs conceptually from the restraint of aggressive desires. Anger control as measured by AX/Con appears to be concerned with outcome, i.e., frequency of successful control of anger, and implies not behaving aggressively (see section 2.3.2.4); whereas restraint of aggressive desires is interested in instigation to aggression, and more specifically, the effort to combat the desire to behave aggressively. Simply, it appears that AX/Con measures successful control, whereas restraint is interested in attempted control. If so, AX/Con is a measure of how frequently an individual successfully restrains the desire to aggress,

but excludes those instances where restraint is employed but disinhibition occurs. Restraint of aggressive desires measures attempted control, irrespective of whether the attempt is successful.

Anger control and the restraint of aggressive desires were expected to be related. It was expected that everyone employing restraint has a degree of success (control). Otherwise restraint is likely to be abandoned, and other strategies such as "they made me do it" adopted.

3.2.5 Restraint of Aggressive Desires, Anger, and Aggression.

3.2.5.1 Restraint of Aggressive Desires, Trait Anger, and Aggression.

In section 3.2.2 it was suggested that at each level of restraint of aggressive desires that levels of instigation to aggression would also vary, and that trait anger can be seen as a partial measure of instigation to aggression. This was further considered in section 3.2.4.1. Also, it was expected that individuals who display high levels of aggression (either frequency or intensity) would also have above average levels of instigation to aggression, and therefore trait anger.

If the predictions from restraint theory hold up, and if Megargee's findings generalize from violent offenders to the population of individuals with above average instigation to aggression, then the following was expected for individuals with above average trait-anger:

i) high restrainers would display significantly lower frequency of aggressive behaviour than low restrainers; and

ii) high restrainers would display significantly greater average intensity of aggressive behaviour than low restrainers.

The above predictions excluded individuals with below average trait anger for at least two reasons. Firstly, the presence of instigation to aggression is necessary for restraint theory to be meaningful, and the relationship between restraint and aggression is theoretically unclear for low levels of instigation to aggression. Secondly, low levels of instigation to aggression would also capture those angry individuals whose anger is

removed from consciousness, and the inclusion of this group could further mask any relationship between restraint of aggressive desires and aggression.

3.2.5.2 Restraint of Aggressive Desires, Anger, and Aggression.

Perhaps the most intriguing possibilities were obtained by drawing all the measures together. Megargee's Chronically Overcontrolled Aggressive Type, and Undercontrolled Aggressive Type have been mentioned in section 3.2.2, which considers the relationship between restraint of aggressive desires, instigation to aggression, and frequency and intensity of aggression. In addition, Pape (1986) used categories of expressors (high AX/Out, low AX/In) and suppressors (low AX/Out, high AX/In), remembering that AX/Out and AX/In appear primarily to measure maladaptive expression of anger. Are Megargee's types, and Pape's expressors and suppressors capturing related concepts, and could the pattern generalise to populations other than violent offenders? Potentially it appears so. If so, the relationships could look like this:

1) high trait anger; high restraint of aggressive desires; low AX/Out; high AX/In. Therefore low frequency of aggressive behaviour; high average intensity of aggressive behaviour = overcontrolled suppressors;

2) high trait anger; low restraint of aggressive desires; high AX/Out; low AX/In. Therefore high frequency of aggressive behaviour; low average intensity of aggressive behaviour = undercontrolled expressors.

A possible third category could be added, viz.,

3) high trait anger; high restraint of aggressive desires; high AX/Out; high AX/In. Therefore high frequency of aggressive behaviour; variable intensity of aggressive behaviour = frequent disinhibitors.

Overcontrolled suppressors would be individuals who experience greater than average levels of trait anger; employ greater than average levels of restraint of aggressive desires; express anger-out less often than average; express anger-in more often than average; disinhibit occasionally

and therefore behave aggressively less often than average; and who, when they behave aggressively do so with greater than average intensity.

Undercontrolled expressors would be individuals who experience greater than average levels of trait anger; employ lower than average levels of restraint of aggressive desires; express anger-out more often than average; express anger-in less often than average; frequently behave aggressively; and who, when they behave aggressively do so with varying degrees of intensity, but do so on average with significantly less intensity than overcontrolled suppressors.

Frequent disinhibitors would be individuals who experience greater than average levels of trait anger; employ greater than average levels of restraint of aggressive desires; express anger-out more often than average; express anger-in more often than average; behave aggressively more often than average due to frequent disinhibition; and who, when they behave aggressively do so with varying degrees of intensity.

In line with Megargee's algebra of aggession which viewed aggression as the target behaviour with a number of contributing variables, subjects were categorized by restraint of aggressive desires, trait anger, AX/In, AX/Out, and then compared to see if the predicted differences in the average frequency and intensity of aggressive behaviours emerged.

3.3 PREDICTIONS SUMMARIZED

3.3.1 Anger

It was expected that individuals who experience higher levels of trait anger, would on average exhibit higher levels of both anger-in and anger-out, than individuals who experience lower levels of trait anger. Therefore, a significant positive correlation between T-anger and both AX/In and AX/Out was predicted.

Also, a prisoner sample was used to investigate whether a violent offender group would differ significantly from the other groups on measures of T-anger, AX/In, AX/Out, and AX/Con. Predicted outcomes were:

i) violent group significantly greater T-anger than other groups;

ii) violent group significantly greater AX/In than other groups (in line with T-Anger, AX/In correlation prediction);

iii) violent group significantly greater AX/Out than other groups; and

iv) violent group significantly lower AX/Con than other groups.

3.3.2 Restraint of Aggressive Desires, and Aggression.

A significant negative correlation between restraint of aggressive desires and frequency of aggressive behaviour; and a positive significant, but not strong, correlation between restraint of aggressive desires and intensity of aggressive behaviour was predicted.

Prison Sample. It was expected that the violent offender group would be a mixture of high and low restrainers, but with low restrainers being more numerous. Megargee would predict that the extremely assaultive more often fit the Chronically Overcontrolled Aggressive Type of classification. As the violent offender was assumed typically to be a low restrainer it was predicted that violent offenders as a group would employ significantly lower restraint of aggressive desires than nonviolent offenders. The relationship between the prisoner categories and restraint of aggressive desires was further explored by calculating an observed frequency table using prisoner categories and three levels of restraint, high, moderate, and low.

3.3.3 Anger and Aggression.

3.3.3.1 The Experience of Anger and Aggression

A positive significant correlation between experience of anger as measured by T-anger, and both aggression measures, i.e., frequency and intensity, was predicted. Note that the aggression measure employed attempted to measure hostile aggression.

3.3.4 Restraint of Aggressive Desires, and Anger.

3.3.4.1 Restraint of Aggressive Desires and the Experience of Anger.

A nonsignificant correlation between restraint of aggressive desires and experience of anger (T-anger) was predicted. To explore further the relationship between T-Anger and restraint of aggressive desires observed, frequency tables were calculated using three levels of restraint of aggressive desires and two levels of T-Anger (above and below average).

3.3.4.2 Restraint of Aggressive Desires and the Expression of Anger: Anger-in and Anger-out.

1) As AX/Out was intended as a frequency measure of aggressive behaviour, a significant negative correlation between AX/Out and restraint of aggressive desires was predicted, i.e., the same as between restraint of aggressive desires and frequency of aggressive behaviour.

2) A significant positive correlation between restraint of aggressive desires and AX/In was predicted.

3.3.4.3 Restraint of Aggressive Desires and Anger Control.

A significant positive correlation between AX/Con and the restraint of aggressive desires was predicted.

3.3.5 Restraint of Aggressive Desires, Anger, and Aggression.

3.3.5.1 Restraint of Aggressive Desires, Trait Anger, and Aggression.

For individuals with above average T-anger the following was predicted:

i) high restrainers would display significantly lower frequency of aggressive behaviour than low restrainers; and

ii) high restrainers would display significantly greater average intensity of aggressive behaviour than low restrainers.

3.3.5.2 Restrait of Aggressive Desires, Anger, and Aggression.

Using the three types of aggressive individual (section 3.2.5.2) the following predictions were made:

1) Overcontrolled suppressors: Low frequency of aggressive behaviour, and high average intensity of aggressive behaviour;

2) Undercontrolled expressors: High frequency of aggressive behaviour, and low average intensity of aggressive behaviour; and

3) Frequent disinhibitors: High frequency of aggressive behaviour, and variable intensity of aggressive behaviour.

CHAPTER 4. DEVELOPMENT OF THE MEASUREMENT INSTRUMENTS.

4.1 THE RESTRAINT OF AGGRESSIVE DESIRES (ROAD) SCALE.

4.1.1 Initial Item Selection.

Restraint of aggressive desires was defined as a cognitively mediated effort to combat an urge or desire to behave aggressively. To develop a scale to measure the restraint of aggressive desires a pool of seventeen items was constructed. Some of the items were based on items used in various eating restraint scales, in particular the Revised Restraint Scale, the Dutch Eating Behaviour Questionnaire, and the Three-Factor Eating Questionnaire. Also, a number of new items were constructed with the use of the Oxford Dictionary and Roget's Thesaurus.

In developing the pool of items for the pilot ROAD scale a number of conceptual considerations were taken into account:

1) Definitionally, the target of restraint is aggressive behaviour. Although the focus of interest is on aggression motivated by anger (hostile aggression), some items could refer to instrumental aggression. Restraint of aggressive desires as a concept is not restricted to hostile aggression, the desire to behave aggressively can originate from motives other than anger. Some of the items referred to aggressive desires, some to anger, and some to both anger and aggression. Therefore, although the questionnaire did not exclude instrumental aggression, by its item content it was biased towards hostile (angry) aggression.

2) A number of items referred to expression of anger and therefore behaviour, without any direct reference to behaviour, e.g., to the control of anger, holding back of anger. However, such questions were designed so that behaviour was the target of the restraint by implication.

3) The ROAD scale was intended as a general or trait measure of the restraint of aggressive desires. Therefore, in developing the items no reference was made to either primary emotions, specific situations, or to specific types of aggression, which limited the type of question and range

of words available in developing the scale items. The instructions (see Appendix One) advised subjects that the words aggressive and aggression referred to all types of aggression. The goal was to attain a measure which captured individual differences in disposition to restrain aggressive desires.

4) Restraint is cognitively mediated and refers to a conscious effort to combat aggressive desires. The use of a self-report questionnaire is consistent with this, i.e., the intention of a self-report questionnaire is to report only that which is consciously experienced, noting potential bias due to social disirability.

5) In sections 2.1.4 and 3.2.4.3 the difference between outcome measures (successful control or failed control, i.e., disinhibition) and restraint (attempted control independent of outcome) is mentioned. It is conceptually tidy to restrict items to those which do not confound attempted control with outcome. The pilot scale did include some items which confounded outcome and restraint. This occurred prior to the conceptual issues being clearly isolated, and two factors contributed to this. i) The eating disorders literature did not clarify this conceptual difference: The Revised Restraint Scale emphasized outcome (e.g., weight fluctuation), and included the conseqences of failed restraint (disinhibition) i.e., feelings of guilt after disinhibition; the restraint factor of the Three-factor Eating Questionnaire measured successful conscious control; and the Dutch Eating Behaviour Questionnaire a mixture of successful control and restraint, irrespective of success of failure (pure restraint). ii) The pilot scale included dependent variable measures of both frequency and intensity. The intensity items automatically took account of this problem, whereas the frequency items did not.

6) Several items were included which attempted to measure restraint indirectly. Such items, if selected for the final ROAD scale, would provide variability of wording to the questionnaire. Examples of such items were, "I believe that life is too short to worry about controlling my anger", and,

"Do you give too much time and thought to being aggressive?".

7) Bidirectionality. Ideally, to control for potential bias due to response set, half the items would score restraint in one direction of the dependent variable, and half the items would score restraint in the opposite direction. Several difficulties were encountered in attempting to construct items which measured an absence of restraint. Firstly, this concept is not easily expressed, tends to be cumbersome, and/or tends to involve double negatives. For example, an item such as, "Do you make little effort to stop yourself from behaving aggressively?", if answered in the negative would contain the meaning, "I almost never make little effort.....", or, "I not at all make little effort to...". Secondly, possible items which made sense tended to confound outcome with restraint. For example, in answering the item, "Do you behave as aggressively as you want?", an affirmative response could confound low restraint, with frequent disinhibition coupled with high restraint. Consequently, only three items which were scored in the opposite direction were included in the pilot restraint scale.

4.1.2 The Dependent Variable.

The ROAD scale measures restraint of aggressive desires with both an intensity and frequency measure, using a four point scale. These four point intensity and frequency measures were based on those used by Spielberger et al., (1983) in the State-Trait Anger Scale, where an intensity measure was used for state anger and a frequency measure was used for trait anger. State anger was intended to measure the intensity of a person's feelings right now; trait anger was intended to measure how angry a person generally feels over time. Persons with high levels of trait anger were expected to experience more intense elevations of state anger whenever annoying or frustrating conditions were encountered. It was decided to include both an intensity and frequency measure in the pilot ROAD scale, i.e., to measure frequency of restraint of aggressive desires, and an average intensity of the effort to restrain aggressive desires. The four point

intensity measure was: 1) not at all, 2) somewhat, 3) moderately so, 4) very much so. The four point frequency measure was: 1) almost never, 2) sometimes, 3) often, 4) almost always.

The initial pool of seventeen items included eleven items using a frequency measure, and six with an intensity measure. The frequency items were favoured as the intention of the ROAD scale was to measure a general or trait measure of restraint of aggressive desires, and the use of a frequency measure was in line with Spielberger et al's., (1983) definition of trait anger as being in terms of individual differences in frequency that state anger was experienced over time. Equivalently, restraint of aggressive desires was seen as being in terms of individual differences in frequency that restraint was experienced over time. The majority of questions could have been used either as a frequency or intensity item with minor alterations. Items number 1, 5, and 16 scored restraint in the opposite direction from the other items.

A copy of the pilot ROAD scale is in Appendix One.

4.1.3 Subjects and Procedure.

The pilot ROAD scale was administered to a class of 1988 Stage III psychology students at the University of Canterbury during normal lecture time. Students were told that the questionnaire investigated aspects of anger and aggression, and were asked to write their age and sex on the questionnaire. Students were not directly informed that the scale investigated restraint of aggressive desires. This was done to limit potential bias, such as social desirability, and experimenter expectancies. The instructions printed on the questionnaire are in Appendix One.

4.1.4 Results of the Pilot ROAD Scale.

95 students completed the pilot ROAD scale. They ranged in age from 20 years to 51 years with a mean age of 27 years, 6 months; 50 were female, 18 male, and 27 did not specify. The results of the pilot ROAD

scale were analysed using the Statview package (Feldman, Gagnon, Hofmann, & Simpson, 1988) on an Apple Macintosh computer. Separate factor analyses were not performed for male and females due to insufficient numbers. Responses to all items ranged from 1 to 4 with total scores ranging from 23 to 63 (with a possible range from 17 to 68), with a mean of 44.8, and standard deviation of 7.8. The results were factor analysed using a principal component procedure; the transformation method was orthotran/varimax; and the extraction rule was the eigenvalue criterion (eigenvalue ≥1). Four factors were extracted with eigenvalues ≥ 1, and Table Two shows the magnitude and proportion of variance of these factors.

TABLE TWO: Eigenvalues and Proportion of Original Variance of Initial Factors Extracted from the Pilot ROAD Scale.

	Eigenvalue	Prop., of Variance
Factor One	5.9	0.35
Factor Two	1.7	0.10
Factor Three	1.4	0.08
Factor Four	1.2	0.07

Clearly, one primary factor emerged, with three minor factors. Table Three (page 66) contains the factor loadings of the 17 items on the primary factor, as well as the item-remainder correlations. Apart from item 2, which was "Do you give too much time and thought to being aggressive?", all items loaded plus or minus 0.31 or greater on factor one. The primary factor to emerge appeared to be consistent with the construct of constraint.

The rankings of items in terms of the factor loadings and item-remainder correlations were very similar, with the group of items comprising the top ten rankings being the same for both loadings on the primary factor, and the item-remainder correlations. Cronbach's alpha

TABLE THREE. Factor Loadings and Item-remainder Correlations for the Pilot Restraint of Aggressive Desires Scale for 95 Stage III Psychology Students.

Item No.	Factor Loadings		Item-Remainder Correlations	
	Freq. items	Intens. items	Feq. items	Intens. items
1*	-0.59		0.51	
2	-0.04		-0.04	
3	0.50		0.39	
4	0.68		0.58	
5*	-0.59		0.48	
6	0.38		0.32	
7	0.55		0.44	
8	0.67		0.57	
9	0.40		0.34	
10	0.76		0.71	
11		0.73		0.58
12		0.71		0.55
13		0.75		0.59
14		0.66		0.51
15		0.73		0.60
16*		-0.31		0.23
17	0.50		0.37	

*Scoring recoded in opposite direction to calculate item-remainder correlations.

coefficient, a measure of internal consistency, which is the mean value of all possible split-half reliability coefficients (Miller & Wilson, 1983) was 0.86, a very satisfactory result. This high alpha coefficient reflects a fairly narrow construct. Some reasons for this were outlined in section 4.1.1.

4.1.5 The Final ROAD Scale.

The group of ten items, which comprised the top ten rankings of items on both the primary factor and the item-remainder correlations, was selected for the final questionnaire. The tenth ranked item for both was item 5, which had a factor loading of -0.59, and an item-remainder correlation of 0.48. This group of 10 items comprised five of the items using frequency measures, and five of the items using intensity measures. Cronbach's alpha coefficient using the pilot data for these 10 items was 0.88.

Two changes were made to items for the final questionnaire. Firstly, one of the frequency items, item 5, was changed to an intensity item, and one of the intensity items, item 11, was changed to a frequency item. This did not require a change in the wording. The ninth and tenth ranked items in terms of both factor loadings and item-remainder correlations, items 1 and 5, were both frequency items. They were also two of the three items which measured restraint in the opposite direction, and both confounded outcome with restraint. In order to balance these across the intensity and frequency halves of the scale one was made into an intensity item, and was replaced with an existing intensity item. The decision to include items 1 and 5 in the final questionnaire was a marginal one, and could be debated. Although the two items would limit potential bias due to response set if it occurred, they would not eliminate such an effect as they comprise only two of the10 items. Also, it is desirable to have a scale comprising items which do not confound restraint and outcome.

Secondly, the wording of three of the frequency items, items 4, 8,

and 10, had the verbs try, make an effort, and attempt, inserted respectively. This was done to change the items so that they measured effort (restraint) rather than successful control (outcome). The fact that these three items loaded onto the primary factor prior to the change of wording could mean one of several things: i) that items measuring successful control (outcome) could correlate highly with items measuring effort (restraint); ii) subjects do not make a distinction between the two conceptually and therefore both types of items measure the same construct.

A factor analysis was also carried out on the pilot data, but using only the 10 items selected for the final questionnaire. The analysis produced two factors with eigenvalues ≥1, a primary factor with an eigenvalue of 4.7 (restraint), and a minor factor with an eigenvalue of 1.1. Of interest is that the five items using frequency measures in the pilot ROAD scale loaded positively on the minor factor, and the five items using intensity measures loaded negatively. This could have been due to either: i) the intensity/frequency measures; or ii) that the five frequency items as worded in the pilot scale could also have tapped into outcome.

4.1.6 Psychometric Analyses Using the Main Study Data.

The following analyses used the data collected from the student sample in the main study. This study is described in the method chapter (Chapter 5). These analyses are included here as they are concerned with the development of the ROAD scale.

A factor analysis of data collected from 130 student subjects in the main study, using the final version of the questionnaire, which eliminated the possible confound of restraint and outcome from all but two items, and balanced these two across frequency and intensity measures, extracted two factors with eigenvalues ≥1, a major factor (restraint) with an eigenvalue of 4.6 and a minor factor with an eigenvalue of 1.1. The minor factor did not load positively for frequency measures and negatively for intensity measures, rather a mixture of both positive and negative loadings

for both frequency and intensity measures resulted. This suggests that the earlier result, mentioned in the last paragraph of the previous section, was due to the fact that the five frequency items as worded in the pilot scale could also tap into outcome. This is further supported by the result, using the main study data, that the two items in the final ROAD scale (items 4 and 8) which scored restraint in the oppostite direction, and which confounded restraint with outcome loaded 0.90 (item 8) and 0.32 (item 4) on the minor factor. Items 4 and 8 also loaded 0.38 and 0.19 respectively on the main factor (being coded in the opposite direction in the main study), with all other items loading 0.63 or greater. In the pilot data analysis these two items loaded -0.59 (see Table Three). This result suggests that items 4 and 8 should be dropped from the scale in future. A factor analysis of the remaining eight items using main study data produced only one factor with an eigenvalue ≥ 1, with all factor loadings being 0.64 or greater.

Several other statistical analyses were carried out using the student data from the main study. Firstly, the ROAD scale was administered to the student sample a second time 28 days after the first time. 82 of the 130 students who completed the ROAD scale in the initial administration completed it at follow-up. The test-retest reliability correlation coefficient was $r = 0.75$, $p < 0.01$. This reliability measure is a measure of temporal stability, and a coefficient of 0.75 for a ten item scale is quite satisfactory.

Secondly, the correlation coefficient between the ROAD scale and the AX/Con subscale (Spielberger et al., 1988) was calculated as a measure of convergent validity. A significant positive correlation was found, $r = 0.27$, $p < 0.01$ for students. This demonstrates a convergent, but not strong, relationship.

Thirdly, the Marlowe-Crowne Social Desirability scale (Marlowe & Crowne, 1960, 1964) was also administered to the student sample to test to what extent the ROAD scale might be measuring social desirability. The

ROAD scale could be conceptually related to social desirability, by the likelihood that restraint of aggressive desires is often seen by society as desirable, and could therefore be a contributing factor to the presence of restraint. Hence, a postive significant correlation coefficient between the two scales could measure ¡) a conceptual relationship, and/or ¡¡) the possibility that subjects overestimate their restraint scores in order to appear socially acceptable. The correlation coefficient between the two scales was $r = 0.28$, $p < 0.01$. Hence the relationship between the M-C Social Desirability Scale and the ROAD Scale is significant, although it is not very strong.

Fourthly, a t-test was calculated to see if there was a significant difference between male and female subjects. Of the 130 student sample in the main study, for whom ROAD scores and sex data were present, there were 79 females with a mean ROAD score of 28.2, and 44 males with a mean ROAD score of 29.5. The result of a two tailed t-test was $t(121) = 1.20$, $p = 0.23$, ns. Hence, no significant difference between males and females on ROAD scores was found.

Fifthly, results of the frequency and intensity halves of the ROAD scale were compared using the student sample. The frequency-intensity split-half correlation coefficient was positive and significant ($r = 0.71$, $p < 0.01$). The mean of the frequency scores was 13.97, and the mean of the intensity scores was 14.73. This result shows that the two halves correlate highly.

A copy of the final form of the ROAD scale is in Appendix Two

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4.2 THE SELF-REPORT AGGRESSIVE BEHAVIOUR QUESTIONNAIRE.

4.2.1 Construction of the Questionnaire.

In order to test the hypotheses that have emerged, a measure of aggressive behaviour, including both intensity and frequency of aggressive behaviours, was necessary. In the absence of known existing instruments to do this, the Self-report Aggressive Behaviour Questionnaire (SABQ) was

developed. A self-report questionnaire on aggression is fraught with reliability dangers but it was hoped that such a questionnaire would be satisfactory for this exploratory study.

In developing the questionnaire it was decided to restrict the questions to hostile (angry) aggression as this was the main focus of the study, and enabled the relationship between restraint of aggressive desires,anger and aggression to be explored. Subjects were asked to estimate the number of times they had behaved aggressively in the previous two months in response to getting angry, and also asked to estimate the average intensity of those aggressive behaviours. Average intensity was measured using a four point scale: 1) mildly aggressive; 2) somewhat aggressive; 3) moderately aggressive; 4) very aggressive.

Aggressive behaviour was broken down into five mutually exclusive categories. These categories are those of Averill (1982, 1983), see section 1.2, who categorised behaviours reported in response to getting angry, and included three categories of direct aggression, indirect aggression, and displaced aggression. The use of these categories forced subjects to consider the same range of aggressive behaviours, rather than a narrower or subjective understanding of which behaviours comprise aggression.

The construction of the questionnaire allowed for three types of aggressive measure: frequency (Af), average intensity (Ai), and a frequency x average intensity (Af x Ai) measure. As the five categories of aggressive behaviour are mutually exclusive the aggression measures can be combined to obtain an overall aggression measure, or if desired separate measures for each category of aggressive behaviour can be obtained.

Appendix Two contains a copy of the Self-Report Aggressive Behaviour Questionnaire.

4.2.2 Some Psychometric Analyses Using the Main Study Data.

Again, the following analyses have been carried out using the data from the student sample in the main study, which is described in Chapter 5.

The reliability of the SABQ questionnaire to measure actual aggressive behaviour, rather than subjective perceptions, cannot be assessed. However, three psychometric properties were assessed using data gathered from the 130 students in the main study. In these analyses the data from two subjects was eliminated due to skewedness in the frequency of aggressive behaviour (Af) distribution. The procedure used is described in section 6.3. No significant skewedness occurred with the average intensity of aggressive behaviour (Ai) distribution. The three psychometric properties assessed were:

1) Temporal stability: Test-retest reliability. The Self-report Aggressive Behaviour Questionnaire, along with the ROAD scale was readministered 28 days after the initial administration. Of the 130 students who completed the questionnaire in the initial administration, 61 completed it at follow-up. At follow-up, subjects were asked to estimate frequency and intensity of aggressive behaviour in the previous month. The time period was reduced from two months to one month, to ensure that the two administrations related to different time periods. The results of the retest were doubled to enable direct comparisons with the initial administration. The test-retest correlation coefficients were: ¡) frequency of aggressive behaviour (Af), $r = 0.61$, $p < 0.01$; and ¡¡) average intensity of aggressive behaviour (Ai), $r = 0.52$, $p < 0.01$. The results were not as high as desirable, but considering the small number of items involved, were encouraging.

2) Convergent validity of frequency of aggressive behaviours (Af). The anger-out subscale (AX/Out) of the STAXI is primarily a measure of hostile (angry) aggression, the same as Af. The major differences between the two scales are that the AX/Out subscale contains eight items which refer to either specific behaviours or general descriptors such as, "I lose my temper", is interested in how often these behaviours are engaged in when a person is angry, and uses a four point frequency scale; whereas Af aims to measure total frequency of aggressive behaviours in a given time period. A

high Af, AX/Out correlation coefficient is theoretically expected, and the result was $r=0.21$, $p<0.05$. This demonstrated a convergent relationship, but not a particularly strong one. The most obvious explanation for this low correlation is the differences just described between the two scales. In particular, a person with a low frequency of aggressive behaviour score on the SABQ, might score highly on the AX/Out subscale as he or she almost always is aggressive when conscious of angry feelings. To test convergent validity further, the use of measures other than self-report would be desirable.

3) Social desirability. Correlation coefficients between the aggression measures, and the Marlowe-Crowne Social Desirability Scale were calculated to see to what extent the self-report aggression measures overlap with social desirability. 127 of the 130 students completed the C-M Social Desirability Scale. Whilst a negative correlation might theoretically exist, a strong negative relationship would question the construct validity of the questionnaire. The correlation coefficient between the Marlowe-Crowne scores and Af was $r = -0.30$, $p < 0.01$; and Ai, $r = -0.28$, $p < 0.01$.

CHAPTER 5. METHOD: THE MAIN STUDY.

5.1 THE VARIABLES AND MEASUREMENT SCALES.

This study explored the relationship between the following variables:

- trait anger as measured by the T-Anger subscale of the State-Trait Anger Expression Inventory (Spielberger et al., 1988);
- anger-in as measured by the AX/In subscale of the STAXI;
- anger-out as measured by the AX/Out subscale of the STAXI;
- anger control as measured by the AX/Con subscale of the STAXI;
- restraint of aggressive desires as measured by the ROAD Scale;
- frequency of hostile (angry) aggression (Af) as measured by the Self-report Aggressive Behaviour Questionnaire (SABQ); and
- average intensity of hostile (angry) aggression (Ai) as measured by the Self-report Aggressive Behaviour Questionnaire.

The three questionnaires, the STAXI, ROAD Scale, and SABQ were administered to two separate samples, a student sample, and a prisoner sample.

5.2 THE STUDENT SAMPLE.

5.2.1 Subjects.

A 1989 Stage III Psychology class at the University of Canterbury comprised the student sample in the main study.

5.2.2 Procedure.

Four questionnaires, the STAXI, the ROAD Scale, the SABQ, and the Marlowe-Crowne Social Desirability Scale, were handed out during during normal lecture time by the researcher. It was explained that the questionnaires investigated aspects of anger and aggression, and that the research being undertaken was in partial fulfilment of an MA degree. The instructions for each questionnaire were written on the questionnaire

concerned and were self-explanatory. No specific instruction was given as to the order that the questionnaires were to be completed. It was indicated that the time required to complete the questionnaires was approximately 15 to 20 minutes.

To ensure confidentiality students were not asked to put their names on the questionnaires, but a code was used to match questionnaires to subjects, and to enable follow-up research. The code was the first three letters of the subject's first name, followed by the number of the day of birth, e.g., the code for Derek, 9/1/55, would be Der9. In addition, demographic information of age and sex was requested, which could also be used to identify subjects if the codes of two or more individuals were the same.

Follow-up research was conducted 28 days following the initial administration of the four questionnaires, in order to retest the ROAD Scale and SABQ. This again was carried out during normal lecture time by the researcher.

5.2.3 The Researcher.

The researcher was the author, a 34 year old, male, Master's student .

5.3 THE PRISON SAMPLE.

5.3.1 Introduction.

The variables of interest in this study were also investigated using a prison sample. By categorizing prisoners into categories of offence using the Police Offence Code, the relationship between restraint of aggressive desires, anger, and aggression was further investigated. By assigning subjects to either a violent offender group, or one of three nonviolent offender groups, differences in restraint of aggressive desires between groups could be tested.

5.3.2 Subjects.

Prisoners from Paparua Prison, Christchurch, N.Z., comprised the prisoner sample in the main study. Paparua Prison is a medium security prison with an approximate muster of 290. The catchment area for Paparua is the top half of the South Island, but due to overcrowding in some prisons, some offenders from other areas are transferred to Paparua. The pool of subjects was selected by the senior psychologist at Paparua, a staff member of the Justice Department Psychological Services. The senior psychologist ensured that, based on current offences, an approximately even number of prisoners from four offence categories, viz., violent, sexual, drug/antisocial, and dishonesty, completed the questionnaires. The researcher was blind as to the criminal history and current offences of the prisoners at the interview stage.

5.3.3 The Researcher.

The researcher was the author, a 34 year old, male, Master's student. He was introduced to subjects by prison staff as a psychologist.

5.3.4 Setting.

All prisoners were interviewed in one of four rooms at Paparua Prison between the hours of 8.30 a.m., and 4.00 p.m., on either a Monday or Tuesday Three of the rooms were in the main prison, and were used depending on availability. Two of the rooms were psychologist's offices, and the third was an interview room. The fourth room used was an interview room in a separate cell complex, commonly referred to as the Huts.

5.3.5 Materials.

The three questionnaires, the STAXI, the ROAD Scale, and the SABQ, formed the basis of the interview. Due to some prisoners' literacy difficulties; to help engage prisoners and thereby increase the likelihood of cooperation; to enable the explanation of any words that were not

understood; and to aid concentration, the researcher orally read out and filled in the questionnaires. The SABQ was administered although it was unlikely to be used in the data analysis, as many subjects had spent the prior two months in prison, which could seriously bias results.

5.3.6 Procedure.

Prospective subjects were summoned individually from their cell block to see the psychologist (researcher). Once a subject arrived it was explained that research was being carried out into aspects of anger and aggression; that three questionnaires were involved; and examples of the questions were read out. Prisoners were then asked if they were willing to participate in the research, and given the opportunity to sign a consent form (Appendix Four). The consent form stated that the research involved a series of questions on anger and aggression; that the questionnaires would take about half an hour to complete; and that any information provided was confidential to the researcher with nothing appearing on the prisoner's file.

Both the researcher and the prisoner were seated, at a distance of approximately 1.5 metres, and no-one else was present. All prisoners completed the questionnaires in the same order, i.e., STAXI, SABQ, and ROAD Scale. The STAXI required the least explanation and its short and easily understood questions assisted prisoners to relax. The SABQ was administered second, as each category of aggression was explained and examples given. This assisted prisoners to gain an understanding of what the researcher intended by aggression/aggressive behaviour, and avoided lengthy repeated explanations when the ROAD Scale was administered.

5.3.7 Classification of Prisoners.

Following the completion of all interviews, the senior psychologist provided the researcher with a list of prisoners categorized by current offences: either violent offender; sexual offender; drug/antisocial offender; or dishonest offender. Also, a full criminal history of each prisoner was

obtained from Justice Department files. A complete offence profile was developed for each prisoner using 74 offences from the Police Offence Code.

The Police Offence Code is used by police entering information into a computer to describe all police jobs, incidents, tasks, and offences. It consists of a simple logical series of numbers each uniquely identifiable. Offence codes incorporate all offences dealt with by the police. Each code is divided into four levels. The first corresponds to the group of crimes under which an offence is listed, e.g., 4(121) = group: dishonesty. The second level corresponds to the class of offence, e.g., 41(21) = class: burglary. The third corresponds to the type of offence, e.g., 412(1) = type: burglary - other property. The fourth level describes the specific offence, e.g., 4121 = specific offence: burgles other property - estimated value over $1,000 - day. The Police Offence Code consists of eight groups of offences: 1000 Violence; 2000 Sexual; 3000 Drugs and Antisocial; 4000 Dishonesty; 5000 Property Damage; 6000 Propery Abuse; 7000 Administrative/Against Justice; and 8000 Traffic.

For each subject a criminal profile was developed consisting of their score on a checklist of 76 offences. Wales (1988) performed cluster analysis on 76 prisoner profiles, using an almost identical list of 79 offences, and failed to produce meaningful clusters of subjects in terms of similar offence histories. Consequently, he employed a method of classification which assigned prisoners to one of the eight Police Offence Code groups. Subjects were classified according to which of the groups his most numerous or most serious offences lay. Using this criterion, Wales found that four groups of offenders emerged: all but one prisoner was assigned to one of the first four offence groups, i.e., violence, sexual, drug/antisocial, dishonesty. The dishonesty offences were primarily theft, burglary, car conversion, receiving stolen goods, and fraud.

A similar procedure was employed in this study. Prisoners were assigned to the group in which the most numerous or most serious offences lay. In the majority of cases the decision was relatively clear. Where

uncertainty existed several criteria were used. Firstly, a prisoner was classified as violent when a single serious violent offence occurred. The following offences were put into this category: murder, attempted murder, manslaughter, injury with intent, aggravated assault, and assault with intent to injure. Secondly, where a small number of other violent offences occurred, whilst the offender was engaged in other offences, e.g., burglary, classification was given to the non-violent group. Thirdly, if other violent offences occurred unrelated to other offences, classification was given to the violent category when these offences occurred in a number which outweighed offences in other offence categories, excluding minor offences such as littering, minor in bar, etc.. These other violent offences included: kidnapping, aggravated robbery, non-aggravated robbery, assault on child, assault on female, assault on police/traffic officer, common assault, and threatening behaviour/language. One other offence, carrying an offensive weapon was not considered a violent offence in itself, and was ommitted from the classification process.

If a profile was equally balanced between two groups, the group with the lower number was given priority, i.e., the violent group was given priority over the sexual group, was given priority over the drug/antisocial group, was given priority over the dishonesty group.

A second classification was also undertaken. This consisted of reassigning those serious sexual offences committed against adults, i.e., rape, attempted rape, indecent assault, sexual violation, and attempted/assault to commit sexual violation; and all sexual offences which included assault, irrespective of whether the victim was an adult or child, to the violent category. "Nonassaultive" sexual offences against children and less serious sexual offences, e.g., indecent exposure, and indecency, were classified as sexual offences. Prisoners were then assigned to an offence group in the same manner as the first classification. The second classification attempted to take account of the fact that the Police Offence Code classified a number of sexual offences which can be

considered violent, as sexual offences. The reclassification of sexual offences as either sexual or violent could have been done a number of ways, e.g., all sexual offences could have been considered violent, but the above method was considered to be a reasonable compromise.

The classification of prisoners according to their offence history rather than based on current offence, was considered preferrable. Both methods could lead to some bias. Classification on the basis of offence history could bias results if an offender was classified as violent based on offences committed a number of years earlier, and if the offender's violent behaviour patterns had changed since. However, this method was considered preferrable to classification based on current offence alone. One fact of relevance is the relatively young age of the average offender. Classification based on offence history provides a better measure of overall violent behaviour. Current offence classification has considerably greater potential for bias, e.g., an offender with a number of previous violent offences could be currently imprisoned for, for example, a drug related offence.

A second psychologist independently carried out both the above two classifications, and an inter-rater reliability coefficient was calculated.

CHAPTER 6. RESULTS.

6.1 SUBJECTS

6.1.1 Student Sample

130, 1989 stage III Psychology students participated in the main study with 130 completing the STAXI, 127 the ROAD Scale, 123 the SABQ, and 127 the M-C Social Desirability Scale. The sample of 130 students comprised 79 females, 44 males, and 7 did not specify. They ranged in age from 19 years to 51 years with a mean age of 25 years. At follow-up 82 of the sample completed the ROAD Scale, and 61 the SABQ.

6.1.2 Prisoner Sample.

Of the 86 prisoners summoned from the cell blocks by the prison officers to "see the psychologist", 7 declined to leave their cell blocks, 3 declined to complete the questionnaires after the study was explained to them, and 76 volunteered and completed the questionnaires. One prisoner's data was dropped from the sample when his offence history was not obtained due to an error in the prison record number, which left 75 in the sample. The age was recorded for 70 of the 75 prisoner sample, with ages ranging from 19 years to 51 years, with a mean of 29 years.

A number of the prisoners were suspicious of the study, particularly as it related to anger and aggression. The concern almost always centred on the possibility that they had been specifically selected as having an anger problem. However, with clarification, particularly that the questions did not relate to specific behaviours, the prisoners appeared to relax. All the prisoners who participated appeared to cooperate, and a number wished to further discuss their own tendencies to anger and aggression.

Almost all prisoners had spent the previous two months in Paparua Prison which could seriously bias the results of the SABQ. Spontaneous comments by prisoners indicated that aggressive behaviour was controlled to a greater degree in prison, particularly as aggressive behaviour

decreased the likelihood of early release. Such comments reinforced the decision not to use the SABQ in the analysis of prisoner data.

Other spontaneous responses were also of interest. A number of comments referred to aggressive behaviour in terms of situation/person specifics, e.g., when other men made comments about a girlfriend, etc... A number of comments also indicated for some prisoners that aggressive behaviour usually occurred under the influence of drugs or alcohol. Also, a few claimed they had changed since committing their offence, usually via anger management courses and/or religious conversion.

6.2 PRESENTATION OF RESULTS

In the following presentation of results, t-tests and one-way Anovas are presented in the text, and group mean and standard deviations given. For other ANOVAS, summary tables and mean tables are given. It was intended to draw figures when significant interactions occurred, but there were none. Correlation coefficient summary tables for both students and prisoners are in Appendix Five.

6.3 SKEWEDNESS OF SABQ DISTRIBUTIONS

In section 4.2.2 it was noted that two subjects were eliminated from the SABQ results as their scores skewed the aggression data. Prior to any adjustments the Af distribution had a skewedness of 3.1, and the Ai distribution a skewedness of 0.23. Outliers were eliminated from the data using the criterion of removing scores which are more than three and a half standard deviations from the mean, i.e., have a probability in a normal distribution of less than 0.01. The data of two subjects were eliminated using the above criterion on the Af distribution. Following this adjustment the Ai distribution was checked but no subjects' data needed to be removed, leaving the two distributions with the following skewedness: Af 1.9; and Ai 0.03.

All analyses using the SABQ have been carried out with these

adjustments.

6.4 CLASSIFICATION OF PRISONERS.

Prisoners were classified by the researcher according to the two offence classification methods described in section 5.3.7. Using the four main offence classification groups, but including the breakdown of the sexual group into violent and nonviolent, the number of prisoners in each group was:

violent 25; violent sexual 16; nonviolent sexual 4; drugs/anti-social 10; dishonesty 20.

The independent classification by a second psychologist resulted in agreement in 68 of the 75 cases, and an inter-rater reliability coefficient of 0.91.

Prisoners were then classified according to the two methods described in section 5.3.7. In the second classification the nonviolent sexual group which consisted of only four prisoners was dropped. The number of prisoners in each group of offence classification A was:

violent 25; sexual 20; drug/anti-social 10; dishonesty 20.

The number of prisoners in each group of offence classification B was:

violent/sexual violent 41; drug/anti-social 10; dishonesty 20.

6.5 ANGER

6.5.1 AX/In and AX/Out Correlation Coefficients.

In line with Spielberger and colleagues' finding that AX/In and AX/Out were independent, it was expected that a nonsignificant correlation between these two variables would result for both samples. The correlations were: for students $r = -0.19$, n.s.; and for prisoners $r = 0.08$, n.s.

6.5.2 Correlations between T-Anger and both AX/In and AX/Out.

A significant positive correlation was predicted between T-Anger and

both AX/In and AX/Out (section 3.3.1). The T-Anger, AX/In correlation coefficient for students was $r = 0.05$, n.s., and for prisoners was $r = 0.32$, $p < 0.01$. The T-Anger, AX/Out correlation coefficient for students was $r = 0.56$, $p < 0.01$, and for prisoners was $r = 0.76$, $p < 0.01$. Both correlations were substantially greater for the prisoner sample, and the student T-Anger, AX/In correlation was the only nonsignificant result.

6.5.3 Prisoner Offence Group Comparisons on T-Anger, AX/In, AX/Out, and AX/Con.

i) The violent prisoner offence group was predicted to have significantly greater T-Anger scores than the other groups (section 3.3.1). Using offence classification A, the ANOVA result was $F(3,71) = 4.44$, $p < 0.01$, with group means and standard deviations of T-Anger as follows:

violent: mean = 22.8, s.d. = 5.8; sexual: mean = 18.1, s.d. = 6.0; drug/anti-social: mean = 16.5, s.d. = 3.1; dishonesty: mean = 19.3, s.d. = 5.2.

Comparison results using Fisher PLSD showed that the violent offender group differed significantly ($p < 0.05$) from all other groups.

Using offence classification B, the ANOVA result was $F(2,68) = 2.98$, $p = 0.06$, n.s., with group means and standard deviations of T-Anger as follows: violent/violent sexual: mean = 21.1, s.d. = 6.1; drug/anti-social: mean = 16.5, s.d. = 3.1; dishonesty: mean = 19.3, s.d. = 5.2.

Thus only when the violent group and sexual violent group were not combined was the prediction upheld.

ii) The violent prisoner offence group was predicted to have significantly greater AX/In scores than the other groups (section 3.3.1). Using offence classification A, the ANOVA result was $F(3,71) = 1.59$, $p = 0.20$, n.s., with group means and standard deviations of AX/In as follows:

violent: mean = 20.2, s.d. = 4.4; sexual: mean = 20.2, s.d. = 5.4; drug/anti-social: mean = 16.5, s.d. = 4.6; dishonesty: mean = 18.7, s.d. = 5.5.

Using offence classification B, the ANOVA result was $F(2,68) = 2.93$, $p = 0.06$, n.s., with group means and standard deviations of AX/In as follows:

violent/violent sexual: mean = 20.4, s.d. = 4.6;
drug/anti-social: mean = 16.5, s.d. = 4.6; dishonesty: mean = 18.7, s.d. = 5.5.

The offence group means were in the predicted direction, but the results were not significant.

iii) The violent prisoner offence group was predicted to have significantly greater AX/Out scores than the other groups (section 3.3.1). Using offence classification A, the ANOVA result was $F(3,71) = 1.70$, $p = 0.18$, n.s., with group means and standard deviations of AX/Out as follows: violent: mean = 17.2, s.d. = 4.7; sexual: mean = 14.8, s.d. = 5.5; drug/anti-social: mean = 13.6, s.d. = 3.1; dishonesty: mean = 15.8, s.d. = 4.6.

Using offence classification B, the ANOVA result was $F(2,68) = 1.32$, $p = 0.28$, n.s., with group means and standard deviations of AX/Out as follows: violent/violent sexual: mean = 16.2, s.d. = 4.8;
drug/anti-social: mean = 13.6, s.d. = 3.1; dishonesty: mean = 15.8, s.d. = 4.6.

Again the means were in the predicted direction but the results were nonsignificant.

iv) The violent prisoner offence group was predicted to have significantly lower AX/Con scores than the other groups (section 3.3.1). Using offence classification A, the ANOVA result was $F(3,71) = 5.90$, $p < 0.01$, with group means and standard deviations of AX/Con as follows:

violent: mean = 18.7, s.d. = 5.8; sexual: mean = 24.4, s.d. = 6.8;
drug/anti-social: mean = 26.8, s.d. = 5.1; dishonesty: mean = 20.7, s.d. = 6.0.

Comparison results using Fisher PLSD showed that the violent offender group differed significantly ($p < 0.05$) from the sexual and drug/anti-social offender groups, but did not differ significantly from the dishonesty group.

Using offence classification B, the ANOVA result was $F(2,68) = 3.90$, $p < 0.05$, with the group means and standard deviations of AX/Con as follows: violent/violent sexual: mean = 21.0, s.d. = 6.6;
drug/anti-social: mean = 26.8, s.d. = 5.1; dishonesty: mean = 20.7, s.d. = 6.0.

Comparison results using Fisher PLSD showed that the violent/sexual violent offender group differed significantly ($p < 0.05$) from the

drug/anti-social offender group, but did not differ significantly from the dishonesty offender group.

When the violent and sexual violent offender groups were not combined, the violent group had significantly lower AX/Con than either the sexual or drug/anti-social groups, but a nonsignificant difference with the dishonesty group.

6.6 AGGRESSION.

The two aggression distributions had means and standard deviations for the student sample as follows:

i) frequency of aggressive behaviour (Af), mean = 14.1, s.d. = 13.6; and

ii) average intensity of aggressive behaviour (Ai), mean = 1.65, s.d. = 0.63.

The Af distribution appears to have a very low mean considering it was intended as a measure of the frequency of all aggressive behaviours over a two month period. Also the standard deviation of the Af distribution was high relative to the mean.

Restraint theory would predict a negative relationship between frequency and intensity of aggressive behaviour. However, the correlation coefficient between Af and Ai indicated the opposite relationship: $r = 0.43$, $p < 0.01$. On average the intensity of aggressive behaviour increases with frequency.

6.7 RESTRAINT OF AGGRESSIVE DESIRES, AND AGGRESSION.

6.7.1 Student sample.

A significant negative correlation between ROAD and Af was predicted (section 3.3.2). The result was $r = -0.12$, n.s.

A significant positive correlation between ROAD and Ai was predicted (section 3.3.2). The result was $r = -0.22$, $p < 0.05$.

Neither prediction was upheld, and the ROAD, Ai correlation indicates that the average intensity of aggressive behaviour decreases with higher levels of ROAD which is the opposite of that predicted.

T-tests were also calculated to investigate this further. Individuals with above and below average ROAD scores were compared on Af and Ai. The results for Af was $t(118) = -0.91$, $p = 0.36$, n.s., with the above average restrainers having a mean of 13.3, and a standard deviation of 13.1, and the below average restrainers having a mean of 15.6, and a standard deviation of 14.3. The results for Ai was $t(116) = -1.62$, $p = 0.11$, n.s., with the above average restrainers having a mean of 1.57, and a standard deviation of 0.73, and the below average restrainers having a mean of 1.77, and a standard deviation of 0.64.

One further result was calculated, which was needed for the discussion of restraint of aggressive desires and aggression. This was the Ai, AX/Con correlation coefficient, and the result was $r = -0.30$, $p < 0.01$.

6.7.2 Prison sample.

The violent prisoner offence group was predicted to have significantly lower ROAD scores than the other groups (section 3.3). Using offence classification A, the ANOVA result was $F(3,71) = 7.42$, $p < 0.001$, with group means and standard deviations of ROAD scores as follows:

violent: mean = 25.3, s.d. = 8.2; sexual: mean = 34.3, s.d. = 5.2; drug/anti-social: mean = 32.7, s.d. = 4.5; dishonesty: mean = 29.8, s.d. = 6.6.

Comparison results using Fisher PLSD showed that the violent offender group differed significantly ($p < 0.05$) from all other groups.

Using offence classification B, the ANOVA result was $F(2,68) = 1.03$, $p = 0.36$, n.s., with group means and standard deviations of ROAD scores as follows: violent/violent sexual: mean = 29.0, s.d. = 8.3; drug/anti-social: mean = 32.7, s.d. = 4.5; dishonesty: mean = 29.8, s.d. = 6.6.

When the violent and sexual violent offender groups were not combined the prediction was upheld. The violent and sexual violent groups had significantly different ROAD scores, and this result confirms that the two groups should be treated as quite distinct.

In addition to the above analyses prisoners were categorized into three

restraint groups; high, moderate, and low ROAD scores. The high and low groups were constructed to contain as close as possible to 25% of the sample, with the moderate group containing the remainder. The high restraint group comprised 20 prisoners, the moderate group 34, and the low group 21. Observed frequency tables were then calculated.

Table Four: Observed Frequency Table: Prisoner Offence Classification A and ROAD groups.

		Offence Classification A			
		violent	sexual	drug/a-s	dishonesty
	high	4	9	3	4
ROAD.	mod.	8	9	6	11
	low	13	2	1	5

Total Chi-Square = 14.5, p = 0.024

Table Five: Observed Frequency Table: Prisoner Offence Classification B and ROAD groups.

		Offence Classification B		
		violent/ sexual viol.	drug/ anti-social	dishonesty
	high	11	3	4
ROAD.	mod.	16	6	11
	low	14	1	5

Total Chi-Square = 3.31, p = 0.51, n.s.

The offence classification A observed frequency table shows that the violent offender group is represented with a higher proportion of low

restrainers, and the sexual offender group is represented with a higher proportion of high restrainers. This supports the earlier result that the violent group consisted of individuals with on average lower levels of restraint than the other groups. However, of importance is that the sexual violent, and violent groups display quite different levels of restraint and should be treated as two separate groups.

6.8 ANGER AND AGGRESSION

6.8.1 The Experience of Anger, and Aggression: Student Sample.

A positive significant correlation between T-Anger and both aggression measures, Af and Ai, was predicted (section 3.3.3.1). The results were:

T-Anger and Af: $r = 0.31$, $p < 0.01$; and

T-Anger and Ai: $r = 0.37$, $p < 0.01$.

These results indicate support for the prediction that both measures of aggression increase with increased levels of T-Anger.

6.9 RESTRAINT OF AGGRESSIVE DESIRES, AND ANGER.

6.9.1 Restraint of Aggressive Desires and the Experience of Anger.

A nonsignificant correlation between ROAD and T-Anger was predicted (section 3.3.4.1). For the student sample the result was $r = -0.08$, n.s., and for the prisoner sample $r = -0.55$, $p < 0.01$. This large difference between the student and prisoner samples can be seen using the observed frequency tables which are on page 90.

For prisoners the high ROAD / above average T-Anger, and low ROAD / below average T-Anger combinations contain a very low number of subjects, but this is not so for students. To further explore this difference, t-tests were calculated to see if there were significant differences between the prisoner and student sample means on ROAD, and T-Anger. The results were

i) Prisoner/student t-test: ROAD: $t(201) = 1.36$, $p = 0.18$, n.s., with means and standard deviations as follows: prisoners: mean = 30.0, s.d. = 7.5; students: mean = 28.7, s.d. = 5.9.

ii) Prisoner/student t-test: T-Anger: t(204) = 1.55, p = 0.12, n.s., with means and standard deviations as follows: prisoners: mean = 19.8, s.d. = 5.8; students: mean = 18.8, s.d. = 4.0.

Table Six: Observed Frequency Table: Students: ROAD groups and T-Anger.

		T-Anger.	
		above average	below average
ROAD.	high	14	22
	mod.	28	27
	low	15	21

Total Chi-Square = 1.48, p = 0.48, n.s.

Table Seven: Observed Frequency Table: Prisoners: ROAD groups and T-Anger.

		T-Anger.	
		above average	below average
ROAD.	high	1	19
	mod.	18	16
	low	17	4

Total Chi-Square = 24.28, p = 0.0001

6.9.2 Restraint of Aggressive Desires and the Expression of Anger: Anger-in and Anger-out.

A significant negative correlation was predicted (section 3.3.4.2) between ROAD and AX/Out. The result for students was r = -0.31, p < 0.01, and for prisoners r = -0.50, p < 0.01.

A significant positive correlation was predicted between ROAD and AX/In. The result for students was r = 0.34, p < 0.01, and for prisoners

r = 0.06, n.s.

Exploratory 2 x 2 ANOVAS were performed using above and below average AX/In and AX/Out as the independent variables, and ROAD as the dependent variable. The only prediction was that the above average AX/Out and below average AX/In group (expressors), would have a significantly lower average level of ROAD, than the below average AX/Out and above average AX/In group (suppressors). Of particular interest is the level of restraint scored by the above average AX/Out and above average AX/In group.

Table Eight shows the results for the student sample and Table Nine the results for the prisoner sample. For students a significant main effect for both AX/In and AX/Out resulted, but their interaction was nonsignificant. For prisoners only the AX/Out main effect was significant.

Table Eight: Students: 2 x 2 ANOVA Results: Above and Below Average AX/In and AX/Out with ROAD.

Anova Summary Table:

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
AX/IN:AB.&BEL.AV. ...	1	289.934	289.934	9.238	.0029
AX/OUT:AB.&BEL. A...	1	135.376	135.376	4.313	.0399
AB	1	39.924	39.924	1.272	.2616
Error	120	3766.24	31.385		

The Table of Means:

		AX/Out		
		Above Average	Below Average	Totals
AX/In	Above Average	n=22 29.82	n=39 30.80	n=61 30.44
	Below Average	n=34 25.53	n=29 28.83	n=63 27.05
	Totals	n=56 27.21	n=68 29.96	n=124 28.72

Table Nine: Prisoners: 2 x 2 ANOVA Results: Above and Below Average AX/In and AX/Out with ROAD.

Anova Summary Table:

Source:	df:	Sum of Squares:	Mean Square:	F-test:	P value:
AX/IN:AB&BEL.AV. (...	1	68.615	68.615	1.527	.2207
AX/OUT:AB&BEL.AV....	1	859.038	859.038	19.112	.0001
AB	1	25.67	25.67	.571	.4523
Error	71	3191.276	44.948		

The Table of Means:

		AX/Out		
		Above Average	Below Average	Totals
AX/In	Above Average	n=16 26.75	n=17 34.77	n=33 30.88
	Below Average	n=19 26.00	n=23 31.65	n=42 29.10
	Totals	n=35 26.34	n=40 32.98	n=75 29.88

The ROAD and AX/Out results, both correlational and ANOVA, indicate that individuals with above average levels of AX/Out exhibit lower levels of ROAD, and vice versa. This applies to both the student and prisoner samples.

The ROAD and AX/In results are less clear. The results, both correlational and ANOVA, suggest that students with above average levels of AX/In exhibit higher levels of ROAD, and vice versa. However, no such finding occurred for prisoners.

The prediction that individuals with above average AX/Out and below average AX/In (expressors) would have significantly lower levels of restraint than individuals with below average AX/Out and above average AX/In (suppressors) was upheld: the posteriori comparisons showed that

the two groups differed significantly at the 0.01 level, in both the student and prisoner samples.

Tables Eight and Nine show that the other two groups i.e., those with both above average AX/In and AX/Out; and those with both below average AX/In and AX/Out had average ROAD scores which lay between the expressor and suppressor groups, for both student and prisoner samples.

6.9.3 Restraint of Aggressive Desires and the Expression of Anger: AX/Con.

A significant positive correlation was predicted (section 3.3.4.3) between ROAD and AX/Con scores. The result for students was $r = 0.27$, $p < 0.01$, and for prisoners $r = 0.63$, $p < 0.01$. This correlation is also used as a test of convergent validity in section 4.1.5.

There was no significant difference between the student and prisoner means on AX/Con. The result was: prisoner/student t-test: AX/Con: $t(204) = -0.41$, $p = 0.97$, n.s., with means and standard deviations as follows: prisoners: mean = 21.7, s.d. = 6.6; students; mean = 21.8, s.d. = 4.6.

6.10 RESTRAINT OF AGGRESSIVE DESIRES, ANGER, AND AGGRESSION.

6.10.1 Restraint of Aggressive Desires, Trait Anger, and Aggression: Student Sample.

It has been suggested that at each level of restraint of aggressive desires that levels of instigation to aggression will also vary (section 3.2.2) and Table One shows the predicted level of frequency and intensity of aggressive behaviour for different combinations of restraint and instigation. Using T-Anger as a measure of instigation to aggression, Table One can have the Af and Ai scores inserted as is shown in Table Ten, and the results compared with the predictions in Table One. Table One is reprinted next to Table Ten on page 94 for the convenience of making comparisons.

TABLE ONE: Predicted Levels of Frequency and Intensity of Aggressive Behaviour for Different Combinations of Restraint of Aggressive Desires and Instigation to Aggression.

		INSTIGATION TO AGGRESSION	
		Low	High
RESTRAINT OF AGGRESSIVE DESIRES	Low	low-moderate frequency low intensity	high frequency variable intensity
	High	low frequency variable intensity	low frequency high intensity

Table Ten: Levels of Af and Ai for Different Combinations of Restraint of Aggressive Desires and T-Anger.

		T- ANGER	
		Below Average	Above Average
RESTRAINT OF AGGRESSIVE DESIRES	Low	n=21 av. Af = 13.2 av. Ai = 1.7	n=14 av. Af = 20.9 av. Ai = 2.1
	High	n=22 av. Af = 9.8 av. Ai = 1.4	n=12 av. Af = 9.5 av. Ai = 1.5
		Total Af = 14.1;	Total Ai = 1.65.

It was predicted in section 3.3.5.1 that for students with above average T-Anger :

i) that high restrainers would display significantly lower Af scores than low restrainers. The (one tailed) result was $t(24) = -1.90$, $p < 0.05$. The high restraint group had a mean Af score of 9.5, and a standard deviation of 7.9. The low restraint group had a mean Af score of 20.9, and a standard deviation of 19.5. Thus the difference is in the predicted direction and is significant.

ii) that high restrainers would display significantly greater Ai scores than low restrainers. The (one tailed) result was $t(24) = -2.42$, $p < 0.02$. The high restraint group had a mean Ai score of 1.5, and a standard deviation of 0.79. The low restraint group had a mean Ai score of 2.1, and a standard deviation of 0.58. This significant result is the opposite of that predicted and along with other results demonstrates the unexpected finding that higher restrainers on average have lower Ai scores than low restrainers. Table Ten shows that this is so for individuals with below average T-Anger, although the result is probably nonsignificant as well as for those with above average T-Anger, and is further evidenced by the ROAD, Ai correlation coefficient in section 6.7.1.

Table Ten indicates several other important results: ¡) that Af scores increase with Ai scores. The Af, Ai correlation (section 6.6) of 0.43 provided further evidence of this. ¡¡) that individuals with low T-Anger and low ROAD still behave aggressively with moderate frequency (mean of 13.2 compared with a total Af mean of 14.1).

6.10.2 Restraint of Aggressive Desires, Aggression, and Anger: Student Sample.

In section 3.2.5.1 three potential types of aggressive individuals were described: i) overcontrolled suppressors; ii) undercontrolled expressors; and ¡¡¡) frequent disinhibitors. Using above and below average ROAD scores, T-Anger, AX/In, and AX/Out scores, the three potential types with

corresponding measures of Af and Ai are described in Table Eleven. Note that earlier analyses used high and low restrainers (top and bottom quartiles) whereas here, above and below average restrainers are used. This was to help increase the numbers in the categories, given that four variables are involved. Complete 2 x 2 x 2 x 2 ANOVAS were not possible due to some cells having too few numbers.

Table Eleven: Af and Ai Scores for Three Types of Aggressive Individuals.

AGGRESSIVE TYPE	Af	Ai	no. in group
Overcontrolled Suppressors (above av. T-anger, above av. ROAD, below av. AX/Out, above av. AX/In)	15.3	1.70	10
Undercontrolled Expressors (above av. T-anger, below av. ROAD, above av. AX/Out, below av. AX/In)	16.3	1.95	17
Frequent Disinhibitors (above av. T-anger, above av. ROAD, above av. AX/Out, above av. AX/In)	23.0	2.04	7

The three categories of aggressive individual in Table Eleven accounted for 34 of the 53 subjects with above average T-anger, with the remaining five possible categories accounting for the remaining 19 subjects. One of these remaining groups comprised seven subjects: above average ROAD, above average AX/Out, and below average AX/In. This group had an Af mean of 20.1 and an Ai mean of 2.00, and appears to be a variant of frequent disinhibitors.

The overcontrolled suppressors were predicted to have low Af and high Ai; the undercontrolled expressors high Af and low Ai; and the frequent disinhibitors high Af and variable Ai. The Af scores are in the predicted direction, although the Af means of the overcontrolled suppressors and undercontrolled expressors are quite close. Again the Ai scores do not

conform to predictions. Rather Ai scores increase with Af scores.

One way ANOVAS were performed to see if the Af and Ai differences between overcontrolled suppressors, undercontrolled expressors, and frequent disinhibitors were significant. The results were:
i) Af: $F(2,31) = 0.59$, $p = 0.56$, n.s.; ii) Ai: $F(2,31) = 0.50$, $p = 0.61$, n.s. Hence although the results showed that frequent disinhibitors were highest on both Af and Ai, the differences were nonsignificant.

CHAPTER 7. DISCUSSION.

The main purpose of this study was to explore the relationship between restraint of aggressive desires, anger, and aggression. The discussion will be in the form of a series of sections, in line with chapters 3 and 6, followed by a summary and conclusion.

7.1 ANGER

7.1.1 Anger-in and Anger-out.

The important finding of Spielberger and colleagues that anger-in and anger-out were independent, and not part of a single unidemensional measure was supported by the nonsignificant AX/In, AX/Out correlations for both students and prisoners. However, it is important to note that Spielberger and colleagues' measures were limited in that they appear to measure essentially maladaptive anger-in and anger-out, and exclude the possibility that both anger-in and anger-out may at times be adaptive. This has been outlined in the literature review. As AX/In and AX/Out are independent, it has enabled subjects to be categorized into four groups: expressors - high AX/Out, low AX/In; suppressors - low AX/Out, high AX/In; and two further groups: ¡) high AX/Out, high AX/In; and ¡¡) low AX/Out, low AX/In. It is considered that this finding of Spielberger and colleagues is an important and exciting one which provides interesting opportunities for future research.

7.1.2 Trait Anger, Anger-in, and Anger-out.

The prediction that individuals who experience higher levels of trait anger, on average exhibit higher levels of both anger-in and anger-out was only partially supported. This prediction was based on the assumption that individuals who have higher levels of T-anger would on average express that anger maladaptively (both AX/Out and AX/In) to a greater extent than individuals with lower levels of T-anger. A clear result in the predicted

direction was found for AX/Out but not AX/In. The answer to this may well be due to the measure of T-anger. The T-anger subscale is intended to measure individual differences in the frequency that angry feelings are experienced, but inspection of the items suggests that it is biased toward AX/Out at the expense of AX/In. There are ten items in the T-Anger scale and five of these infer AX/Out rather than AX/In. These are: "I am quick tempered", "I have a fiery temper", "I am a hotheaded person", "I fly off the handle", and "When I get mad I say nasty things". Four of the remaining five items refer to feelings only and do not imply either anger-in or anger-out: "I feel annoyed when I am not given recognition for good work", "It makes me furious when I am criticized in front of others", "I get angry when I'm slowed down by others' mistakes", and "I feel infuriated when I do a good job and get a poor evaluation". The remaining item is "When I get frustrated I feel like hitting someone". The result that the AX/In, T-anger correlations were lower than the AX/Out, T-anger correlations could be due to the items making up the T-anger scale.

The other finding of interest was that the T-anger, AX/In; and T-anger, AX/Out correlations were substantially greater for prisoners than students. Perhaps this reflects that prisoners on average have less adaptive social skills with which to express their angry feelings, resulting in a closer relationship between levels of T-anger and levels of maladaptive expression, than is the case for students. However, such an explanation would suggest that prisoners display less anger control than students, but there were no significant differences between students and prisoners on anger control (AX/Con).

7.1.3 Prisoner Offence Group Comparisons on T-anger, AX/In, AX/Out, and AX/Con.

In section 5.3.7 two methods of classifying prisoners were outlined. The second classification enabled a number of sexual offenders to be reclassified as violent. A clear outcome of the results was that the violent

offence group and sexual offence group should be treated as two distinct groups. Note that 16 of the 20 sexual group were reclassified as violent in the second classification. The violent and sexual offence groups differed on a number of measures, particularly restraint, which is discussed below. The two groups also differed significantly on two of the four anger measures: the violent offence group had significantly greater T-anger and significantly less anger control than the sexual offence group.

Comparing the anger measures across all prisoner categories revealed that the violent offence group was assessed as more angry and as having less anger control than the other offence groups (with the exception that the violent and dishonesty offence groups did not differ significantly on anger control). However, the violent offence group did not differ from the other groups significantly in styles of anger expression (anger-in and anger-out).

7.2 RESTRAINT OF AGGRESSIVE DESIRES, AND AGGRESSION.

The aggression data collected with the SABQ is self-report and based on memory. Caution needs to be observed in discussing the results. Also, the Af (frequency of aggressive behaviour) distribution was affected by a small number of outliers which, when dropped, altered results. However, overall trends are worth noting and suggest the need for further research.

7.2.1 Students

The predicted relationship between restraint of aggressive desires, and frequency and intensity of aggressive behaviour were not upheld. ROAD and Af were found to be unrelated, and a marginal negative correlation was found between ROAD and Ai.

Restraint is a cognitively mediated effort to combat an urge or desire to behave aggressively. The nonsignificant ROAD, Af correlation suggests that the level of restraint present, by itself, does not indicate the frequency of aggressive behaviour. The significant negative ROAD, Ai

correlation suggests that aggressive intensity decreases with increased levels of restraint of aggressive desires, i.e, high restrainers on average behave aggressively with less intensity. This is the opposite of what restraint theory would predict. Restraint theory proposes that disinhibition periodically occurs whereby self-control is temporarily released or interferred with, and further, that counter-regulation occurs whereby high restrainers once disinhibition occurs, "overindulge" in the behaviour (eating), whereas low restrainers do not. Overindulgence implies a greater degree or intensity in the behaviour. However, our results, using self- report, do not suggest this counter-regulation in the area of aggression.

Two points need to be taken into consideration, however. Firstly, restraint theory may still hold up for those individuals who have an above average motivation to aggression. In this study T-anger is used as a measure of instigation to aggression, and the relationship between ROAD, aggression, and T-anger is discussed below. Restraint theory in the eating disorders literature can work from the premise that the desire to eat is physiologically driven, but this need not be the case with the desire to behave aggressively. The findings therefore do not support those theories which propose that instigation to aggression is innate or unavoidable, and supports those theories which suggest instigation to aggression is not innate or unavoidable but is learned, as with Bandura and Walters social learning theory. If instigation to aggression was innate then the predictions of restraint theory would have been expected to be displayed.

Secondly, the measures of restraint in the eating disorders literature failed to make a clear distinction between outcome measures of restraint (successful control) and attempted control. This is important. If restraint were to measure successful control, then restraint theory predictions would be more likely to be upheld. On average, a person who successfully controls the desire to aggress (or eat), would if motivation is innate or unavoidable be more likely to disinhibit and go out of control, than a person

who displays high restraint (attempted control), which by itself does not measure whether that restraint is successful or not. A positive AX/Con, Ai correlation would support this view with respect to aggression and lend support to innate theories of instigation to aggression. However, the AX/Con, Ai correlation coefficient was significantly negative.

When restraint measures attempted control as the ROAD scale purports to do, then high restrainers might be frequent disinhibitors, and therefore not be expected to exhibit higher levels of Ai, or be successful controllers, and therefore be expected to exhibit higher levels of Ai. Hence a positive Ai, ROAD correlation coefficient is less likely if restraint measures attempted control as the ROAD scale does, rather than successful control.

This has importance also for Megargee's proposed Undercontrolled Aggressive Type, and Chronically Overcontrolled Aggressive Type. The Chronically Overcontrolled Aggressive Type would be expected to have high restraint, but also successful restraint on the most part, and poor adaptive skills of expression/suppression which results in maladaptive suppression (high AX/In, low AX/Out). Clearly restraint alone would not distinguish such an individual. This is further discussed below.

7.2.2 Prisoner Sample

It was predicted that the violent offenders would be a mixture of high and low restrainers, but with low restrainers being more numerous, and therefore the violent offender group was expected to exhibit lower average restraint than the other offender groups. This was found to be the case.

This result does not disprove the existence of Megargee's Chronically Overcontrolled Aggressive Type, but it does suggest that Megargee's Undercontrolled Aggressive Type is more numerous amongst violent offenders. This result also suggests that the Undercontrolled Aggressive Type is more numerous than those with high restraint but who disinhibit frequently.

Of importance is that not only is the violent offender group represented

with a higher proportion of low restrainers, but that the sexual offender group is represented with a higher porportion of high restrainers. Whilst this study is not primarily interested in sexual offenders, the sexual offender group is predominantly made up of offenders classified as violent sexual offenders. Perhaps Megargee's Chronically Overcontrolled Aggressive Type is more frequent among sexual offenders than nonsexual violent offenders. It was noted in the literature review that behavioural theorists maintain that skill deficits including an inability to control anger and hostility, play a major role in predisposing an individual to commit sexual assaults. Our results suggest that such offenders attempt to control their aggressive desires (high restraint) but lack the adaptive skills to express anger. If the inability to control anger and hostility reflects high restraint coupled with disinhibition, the two findings are compatible.

7.3 ANGER AND AGGRESSION.

The prediction that a positive relationship existed between T-anger and both aggression measures, Af and Ai, was supported. Simply, the more frequently a person experiences angry feelings, the more often he or she is likely to behave aggressively, and on average with greater intensity. This makes intuitive sense.

The idea of adaptive and maladaptive expression of anger is very relevant. Individuals with high levels of T-anger would be expected to be less likely to employ adaptive behaviours (which reduce levels of state anger and therefore levels of instigation to aggression), and more likely to employ maladaptive behaviours (which maintain or increase state anger), and therefore maintain higher levels of instigation to aggression and T-anger. This also supports Carlson's notion of an unresolved anger fund.

7.4 RESTRAINT OF AGGRESSIVE DESIRES, AND ANGER.

7.4.1 Restraint and the Experience of Anger.

In section 3.2.2 it was stated that at each level of restraint it was

conceivable that levels of instigation to aggression would also vary. T-anger has been used as a partial measure of instigation, and restraint theory would assume the presence of instigation to aggression. The type of relationship between ROAD and below average levels of T-anger was not predicted, but the high restraint, low T-anger combination was considered least likely. Individuals with good adaptive skills and low T-anger, would need to display little restraint. However, it was noted that this combination could also represent individuals who deny to an extent their anger, but acknowledge efforts at control, the combination which would be likely to be perceived as the most socially desirable.

The results were interesting. For students, T-anger and ROAD were unrelated with the correlation coefficients very close to zero. The observed frequency table for students (Table Six) shows a fairly even distribution of subjects to the six cells (three levels of ROAD, with above and below average T-anger). The below average T-anger and high ROAD cell was well represented suggesting one of at least three alternatives: ¡) that a number of subjects deny their anger to an extent but acknowledge efforts to restrain aggressive desires; ¡¡) faking good: below average T-anger and high restraint could be perceived as the most socially desirable combination; ¡¡¡) that a number of subjects have below average levels of T-anger but still display high levels of restraint, i.e., resist aggressive desires and choose adaptive behaviours to reduce levels of state anger.

Quite a different result emerged, however, for prisoners. A strong negative correlation coefficient between ROAD and T-anger resulted. This large difference between students and prisoners is of importance and cannot be explained due to significant differences between the two samples on either ROAD or T-anger (the differences were small and nonsignificant, see section 6.9.1). The prisoner result suggests that individuals with, on average, higher restraint of aggressive desires have lower trait anger, and vice versa. This is clearly suggested in the observed frequency table (Table Seven) where the high restrainers are represented by a low proportion of

individuals with above average T-anger; and the low restrainers by a low proportion of individuals with below average T-anger.

Table Four tells us that 45% of high restrainers are sexual offenders, and that 62% of low restrainers are violent offenders. Table Seven indicates, therefore, that the prisoner result occurred due to violent offenders typically reporting above average T-anger and low restraint; and sexual offenders typically reporting below average T-anger and high restraint.

Undoubtedly a variety of explanations can be offered. The most appealing to the author is: ¡) violent offenders are typically angry with little restraint of aggressive desires; ¡¡) sexual offenders exercise high levels of restraint (sexual offences are probably the most socially unacceptable) coupled with depressive/denial as a frequent coping strategy for their anger (it has already been noted that behavioural theorists maintain that skill deficits, including an inability to control anger and hostility, play a major role in predisposing an individual to commit sexual assaults).

Only one prisoner had both high restraint and above average T-anger. This is the combination of ROAD and T-anger that would be theoretically expected for Megargee's Chronically Overcontrolled Aggressive Type of violent offender. The current study cannot prove or disprove the existence of Megargee's hypothetical type of violent offender. However, the results suggest that they are relatively rare. It is noted however, that on inspection of offence histories, that none of the violent sample in this study were murderers. Alternatively, such individuals may be those who deny/understate their anger and report high ROAD, and below average T-anger.

7.4.2 Restraint of Aggressive Desires and Expression of Anger: Anger-in, and Anger-out.

The results (section 6.9.2) indicated that individuals with above

average levels of AX/Out exhibit lower levels of restraint and vice versa. Put another way, low restrainers are expected to be aggressive more often than high restrainers. High restrainers, even if a combination of successful restrainers with occasional aggressive behaviours, and frequent disinhibitors (unsuccessful restrainers) with more frequent aggressive behaviours, would still on average be aggressive less often than low restrainers.

Of interest, however, is that for students, the ROAD, Af correlation coefficient was close to zero, unlike the ROAD, AX/Out correlation coefficient. It has already been noted (section 4.2.2) that both Af and AX/Out purport to measure frequency of hostile aggression, but do not demonstrate a strong convergent relationship.

The significant positive relationship predicted between ROAD and AX/In was demonstrated for students but not prisoners (section 6.9.2). The finding that prisoners do not demonstrate the expected relationship between ROAD and AX/In is intriguing and an explanation is not obvious. Perhaps prisoners who have higher levels of restraint on average tend to disinhibit more frequently than students, rather than suppressing their anger?

As AX/In and AX/Out are independent, simple correlations with restraint are insufficient as a total description of the relationship between these variables. The 2 x 2 student and prisoner ANOVAS confirmed that expressors (above average AX/Out and below average AX/In) have lower average levels of restraint than suppressors (below average AX/Out and above averge AX/In).

7.4.3 Restraint of Aggressive Desires and Anger: AX/Con.

The correlation coefficient between ROAD and AX/Con was positive and significant but considerably stronger for prisoners than students (section 6.9.3). It has been suggested that the ROAD and AX/Con scales could measure attempted control of aggressive desires, and successful control of

anger (but implying control of aggressive behaviour) respectively (see sections 2.3.2.4, 3.5.3, and 4.1.6). The above difference between students and prisoners cannot be explained by differences between students and prisoners on either ROAD or AX/Con. It has already been noted that there was a nonsignificant difference in the average ROAD scores between the two samples, and the same result was also found for AX/Con. The stronger ROAD, AX/Con correlation for prisoners suggests that attempted control and successful control are more closely related for prisoners than students. The only explanation that comes to mind is that prisoners made little distinction between the two types of questions.

7.5 RESTRAINT OF AGGRESSIVE DESIRES, ANGER, AND AGGRESSION.

One of the goals of this study was to investigate the interaction of anger and restraint of aggressive desires in relation to aggression. In line with Megargee's algebra of aggression, aggression was viewed as the target behaviour with restraint of aggressive desires and the different anger measures as contributing variables. Also Megargee had hypothesized the existence of the Chronically Overcontrolled Aggressive Type and Undercontrolled Aggressive Type of violent offender. Of interest was to see whether such styles of aggression generalized to populations other than violent offenders. As the SABQ results were considered to be biased for prisoners, given that they related to behaviour whilst incarcerated, the analyses were carried out only with the student sample.

7.5.1 Restraint of Aggressive Desires, Trait Anger, and Aggression: Student Sample.

In section 7.2.1 the relationship between restraint of aggressive desires and aggression was discussed. The presence of instigation to aggression (measured in the study by T-anger) was considered necessary, before the relationship between restraint of aggressive desires and aggression (that restraint theory predicts), would be displayed. The

expected relationship between restraint of aggressive desires and aggression were not found, but this may have been due to the inclusion of individuals with low levels of T-anger. This was found to be partially the case. The analyses in section 6.10.1, which included only individuals with above average T-anger, demonstrated that high restrainers had significantly lower Af scores than low restrainers. However, high restrainers still demonstrated significantly lower levels of Ai than low restrainers, the opposite of what was predicted.

Hence restraint theory was not supported, even when only individuals with above average levels of T-anger were included. High restrainers as a group, once disinhibition occurs do not "overindulge" in the behaviour and go out of control. This result does not support the existence of Megargee's proposed Chronically Overcontrolled Aggressive Type, but neither does it disprove it, as such individuals might form a small sub-group of high restrainers. Although on average those with higher restraint are aggressive with less intensity, even with above average levels of T-anger, a small number of individuals may still conform to Megargee's Chronically Overcontrolled Aggressive Type.

The results relating to this section also highlighted two other important outcomes. Firstly, that Af and Ai have a moderately strong positive relationship. This also does not support restraint theory which would suggest a negative relationship. Individuals who are agggressive more often do so on average with greater intensity. That is, they at least perceive themselves to do so, as the results are self-report. This is an important result. Rather than having the outcome that restraint theory would suggest, i.e., a negative Ai, Af relationship, the opposite occurs. This supports learning theories of aggression: Monahan (1981) has stated that the best prediction of violence is violence; Bandura and Walters (1963) stressed learning principles, particularly reinforcement contingencies which govern the learning and maintenance of aggressive behaviours; and Tavris (1982a, 1982b) believed that most people who are prone to give vent

to their rage get angrier, not less angry. Our results support such views. On the other hand, theorists such as Lorenz, Freud, and the Yale group (see sections 2.2.3 and 3.2.2) argue that instigation to aggression is either innate or unavoidable, and that aggression reduces the level of instigation to aggression. Such a view is compatible with restraint theory, but does not fit the data in this study.

Secondly, the group with below average T-anger and below average ROAD scores still behaved aggressively with moderate frequency and intensity, and to a greater extent than those with high ROAD scores. This reinforces the findings that individuals with high restraint display lower levels of aggression (Af and Ai) irrespective of levels of T-anger.

7.5.2 Restraint of Aggressive Desires, Aggression, and Anger: Student Sample.

In section 3.2.5.2 three types of aggressive individual were suggested, drawing together measures of ROAD, AX/In, AX/Out, Af, and Ai. The three groups were overcontrolled suppressors, undercontrolled expressors, and frequent disinhibitors. Results were shown in section 6.10.2. Although the statistical analyses produced nonsignigicant results, this may well have been due to the small number of subjects in the groups and the need to use above and below average scores rather than top and bottom quartiles, as were used with the ROAD scores in section 6.10.1. The overall results were sufficiently interesting to warrant further investigation.

It is important to note the volatility of the Af scores, with high standard deviations. An example of the volatility of the Af data is demonstrated by the inclusion of one subject in the overcontrolled suppressor group who had an AX/Out score marginally below the mean, which lifted the overcontrolled suppressor mean from 9.0 to 15.3.

The results did not support the predictions in section 3.5.2. Rather than compare the individual groups across all four contributing variables two trends which emerged and which are considered important will be

discussed.

Firstly, the earlier finding that the frequency and intensity of aggressive behaviour scores demonstrated a reasonably strong positive relationship, was repeated and was shown in Table Eleven. This finding has already been discussed in the previous section.

Secondly, the results in section 6.10.2 suggest that perhaps for individuals with above average T-anger, the most aggressive individuals (on both Af and Ai) are those with a combination of above average ROAD and above average AX/Out. Also, it has already been demonstrated that those individuals with higher T-anger are more aggressive (both Af and Ai). Therefore, based on self-report the two groups of individuals with the combination of above average scores on T-anger, ROAD, and AX/Out may be the most frequently and intensely aggressive. Thus, frequent disinhibitors may behave more aggressively (frequency and intensity) than either overcontrolled suppressors or undercontrolled expressors. Caution is needed in assessing the validity of the Af data, both because of self-report and the need to remove the Af outliers, and the fact that this finding has not been demonstrated to be statistically significant. Of particular importance is that these groups display above average ROAD, which is contrary to the earlier finding that ROAD and Ai were negatively correlated, and that violent prisoners on average have below average ROAD scores. What appears to be important is the combination of above average ROAD, above average T-anger, and above average AX/Out.

The above average T-anger, ROAD, and AX/Out groups appear to be comprised of individuals who are chronically angry, who restrain the desire to be aggressive, but who fail and disinhibit frequently, as well as being aggressive with greater average intensity. This does not conform to restraint theory as high levels of both Af and Ai are present, whereas restraint theory would predict low Af and high Ai. Such individuals are unlikely to have adaptive skills to express their anger; their maladaptive expression is often outward (aggressive); and their maladaptive anger-in

style may be either high or low.

These results are at variance with Megargee's proposals that the most dangerous individual is the Chronically Overcontrolled Aggressive Type, whose instigation to aggression must be extremely high to overcome his or her inhibitions against aggression, and who inhibits aggressive responses until they break through in an extremely assaultive response. It may be argued that such individuals are unlikely to be found in a student sample. However, students with tendencies in this direction (overcontrolled suppressors), when theoretically described in terms of ROAD, T-anger, AX/Out, and AX/In appear relatively innocuous.

The result which is compatible, however, with Megargee's hypothesis is that the most aggressive individuals have above average restraint of aggressive desires. However, they also have above average AX/Out. In the author's opinion the description of adaptive and maladaptive expression/suppression of anger in the literature review is very important. It is considered likely that individuals displaying high trait anger and high restraint of aggressive desires have poor adaptive skills; and such individuals when also having high AX/Out (maladaptive aggression) are the most aggressive both in terms of frequency and intensity. Such individuals are potentially more dangerous than Megargee's Chronically Overcontrolled Aggressive Type, because they might commit extremely assaultive acts of violence on a repeated basis, not just once.

7.6 LIMITATIONS OF THE STUDY.

The use of self-report data has inherent reliablitty and validity dangers which was one of the major limitations of this study. However, concepts such as anger and restraint of aggressive desires which are internal events require the use of self-report for measurement. The measurement instrument of most concern was the Self-report Aggressive Behaviour Questionnaire (SABQ). Behaviour, ideally, should be measured in an objective manner. The Af distribution of the SABQ, in particular, is of

concern. There was a suspiciously low mean, and a relatively high standard deviation. Also, the Af data required adjustments for skewedness, and the exclusion criterion was important as the inclusion or exclusion of one or two scores caused significant changes to some results. Using a measure other than memory over the previous two month period, perhaps longitudinal diaries, would be an improvement.

Several limitations occurred with respect to sampling. Firstly, sampling from the gereral population rather than specific populations such as students would allow for increased confidence in results. Generalization of the results in this study need to be done with caution. Secondly, a much larger sample size would have been desirable, especially when considering aggressive styles using the four contributing variables of trait anger, anger-in, anger-out, and restraint of aggressive desires. Larger samples would allow for increased confidence in comparisons between groups differing on these four variables, as well as enabling the comparisons of, say, the top and bottom quartiles, rather than above and below average scores. Thirdly, the prison sample would be improved by a larger number of subjects including a greater representation of murderers, the group of extremely assaultive prisoners which purportedly make up Megargee's proposed Chronically Overcontrolled Aggressive Type. This study was unable to shed light on the existence or not of Megargee's proposed Chronically Overcontrolled Aggressive Type, or Lang et al's (1987) questioning of the existence of this type of aggressive individual. Perhaps sampling from a medium security prison lessened the likelihood of a greater representation of extremely assaultive offenders.

This study was designed to be exploratory and as such considered general measures, or traits. A limitation is recognised in that the specific situations in which an aggressive behaviour occurs, particularly the social context, are important. General measures, or traits, may well be insufficient when considering prediction and treatment of aggressive individuals.

7.7 SUMMARY AND CONCLUSION.

This study has been exploratory and has investigated the relationship between restraint of aggressive desires; anger using measures of trait anger, anger-in, anger-out, and anger control; and aggression using frequency and intensity measures. The concept of restraint of aggressive desires was developed in the eating disorders literature and in this study has been applied to aggression. Restraint has been related to, and can be seen as a partial measure of inhibitions against aggression. A scale to measure restraint of aggressive desires, the ROAD scale, has been developed which appears to have good psychometric properties, and which has attempted to avoid the potential confound between behavioural outcome and attempted control, a problem that was present with the restraint scales in the eating disorders literature. Differences between the ROAD scale and the recent STAXI anger control subscale, AX/Con, have been discussed. The ROAD scale has been developed on theoretical concepts, whilst the the AX/Con subscale emerged from factor analytical analyses of the Anger Expression Scale. It has been suggested that the major difference between the two scales is that AX/Con measures successful behavioural outcome (control of aggression), whereas the ROAD scale measures attempted control or the effort to combat the desire or urge to behave aggressively.

Two samples, a prisoner and student sample, were used in this exploratory study. Also, the Self-report Aggressive Questionnaire, the SABQ, was developed to obtain measures of frequency and intensity of aggressive behaviour. This questionnaire is not as strong psychometrically, and produced skewed frequency of aggression (Af) scores. The adjustment of this data affects the results. Ideally, more objective measures of frequency and intensity of aggressive behaviour would be used. The use of the prisoner sample, categorized into four groups, one of which was violent offenders, was intended to provide separate information with regard to aggressive behaviour, particularly criminally aggressive behaviour.

Spielberger and colleagues acknowledged the complexity surrounding aggression, anger, and hostility by referring to them collectively as the "AHA Syndrome". The literature review in this study summarized some of the research and theories in the areas of anger, aggression, and restraint, and has attempted to make sense of the confusion in the literature on anger. The use of the concepts of adaptive and maladaptive expression of anger has been used to draw together the different threads.

Aggression has been investigated using intensity and frequency measures; by making use of Megargee's algebra of aggression; by taking into consideration four traditional theories of aggression, viz., Lorenz's ethological approach, Freud's psychoanalytic approach, the Yale group's frustration-aggression hypothesis, and Bandura and Walters' social learning theory; and by considering Megargee's hypothetical Chronically Overcontrolled Aggressive Type and Undercontrolled Aggressive Type of violent offender.

In this study it has been suggested that anger-in and anger-out as measured by Spielberger and colleagues are measures of maladaptive suppression and expression of anger. Their independence was confirmed. It was also suggested that Spielberger and colleagues' measure of trait anger is biased towards anger-out at the expense of anger-in.

The prisoner analyses clearly showed that violent offenders and sexually violent offenders should be studied as two separate groups, at least as far as aggression is concerned. Results showed that the violent offender group had the lowest level of restraint of aggressive desires, whereas the sexual offender group (primarily violently sexual) had the highest level of restraint of aggressive desires; and the violent offender group had significantly less anger control than the sexual offender group. Also the violent offender group had significantly greater trait anger than the three other offender groups.

Restraint theory would predict that high restrainers behave aggressively less frequently than low restrainers, and that high

restrainers' self-control is infrequently disinhibited resulting in "overindulgence" in the behaviour. The results did not support this. High restrainers were found to have significantly lower frequency of aggressive behaviour than low restrainers, but this was only evident when individuals with below average trait anger were excluded from the analyses. Trait anger was used as a measure of instigation to aggression, and instigation to aggression is necessary for restraint theory to be meaningful. In addition, and importantly, high restrainers were found to behave aggressively with less intensity than low restrainers. This result was also only evident when considering only those subjects with above average T-anger. Not only does this not fit the predictions of restraint theory but it does not support theorists who propose that instigation to aggression is either innate or unavoidable, and that aggressive behaviour reduces instigation to aggression.

Another related and potentially very important result was that frequency and intensity of aggressive behaviour were found to be moderately and positively correlated (0.43). This also argues against restraint theory and the innate theorists. Rather this result supports the social learning theorists, and the work of people such as Hokanson and Tavris. Those who behave aggressively more often, tend to do so with greater average intensity.

No evidence was found for Megargee's Chronically Overcontrolled Aggressive Type. Violent prisoners on average displayed less restraint of aggressive desires, and less anger control than other groups. Group analysis cannot disprove Megargee's hypotheses however: a small subgroup of violent prisoners may still conform to his predicted pattern. Also, the prisoner sample did not include any murderers, the offence that Megargee's Chronically Overcontrolled Aggressive Type is considered most likely to commit.

General tendencies toward types of aggressive style were investigated using the student sample with hypothisized types, viz., overcontrolled

suppressors, undercontrolled expressors, and frequent disinhibitors. The overcontrolled suppressors were found to be no different from the other two groups on both the frequency and intensity aggression measures. Interestingly, they had the lowest scores on both aggression measures, while the frequent disinhibitors had the highest scores on both. The latter type of individual was hypothesized to be chronically angry; to have above average levels of restraint of aggressive desires but poor skills with which to express anger adaptively; and therefore to disinhibit and express anger-out maladaptively (aggression), frequently, and with high intensity. Such an individual is potentially very dangerous as in the extreme could commit very assaultive acts of violence on a repeated basis.

This study supported the notion that a number of variables contribute to a given aggressive act, and Megargee's algebra of aggression provided a useful structure. This study considered general measures, or traits, and group measures to seek out and to investigate general trends. However, when prediction and treatment are considered, individual styles and the specific situations in which an aggressive act occurs, including social interactions, are important.

7.8 SUGGESTIONS FOR FUTURE RESEARCH.

1) The conducting of similar research with a larger sample of prisoners including a sufficient number of extremely assaultive individuals, especially murderers. This has the potential for helping to decide on the existence or not of Megargée's Chronically Overcontrolled Aggressive Type. Lang et al's (1987) use of the Eysenck Lie Scale to adjust for lying/faking good appears worthy of use.

2) A large sample study in a general population would allow research into the existence or not of the three proposed types of aggressive individual, viz., undercontrolled expressors, overcontrolled suppressors, and frequent disinhibitors. Also, it would further tease apart the complex interactions between variables measuring instigation to aggression,

inhibitions against aggression, and aggressive behaviour. Such a study would enable comparisons between groups with more extreme scores on the contributing variables of trait anger, anger-in, anger-out, and restraint of aggressive desires.

3) The positive significant Af, Ai correlation was an important finding and further research seeking confirmation or otherwise of this relationship is considered warranted. The use of longitudinal diaries to do this has already been suggested. More objective Af and Ai measures would be a significant plus. Also, research conducted among psychiatric patients was briefly mentioned in the literature review. This population could be useful in obtaining more objective aggressive behaviour data, as regular observation of behaviour would be easier than in some other populations.

4) Experimental manipulations involving aggression, as Megargee has pointed out, necessarily focus on lesser forms of aggression. However, the styles of aggressiveness proposed for students could be explored in experimental, situation specific settings.

5) Further psychometric analyses testing validity and reliability of the ROAD and SABQ scales.

6) The differences between violent and sexual offenders in restraint of aggressive desires and anger control, were findings suggesting that further research is warranted.

7) In this study trait anger was used as a measure of instigation to aggression, and individuals displaying below average levels of trait anger, still displayed on average reasonably high levels of restraint of aggressive desires. The theoretical basis and implications of this tentative finding warrants further research.

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APPENDIX ONE: The Pilot Restraint of Aggressive Desires (ROAD) Scale.

QUESTIONNAIRE INSTRUCTIONS

This questionnaire explores aspects of anger and aggression. Please read each question carefully and circle the number under the statement which best describes you. If you find it difficult to make up your mind please make a "best guess".

Please note that where the words "aggression" or "aggressive(ly)" are used the question refers to ALL types of aggressive behaviour, i.e., included are:

1) direct aggression - physical aggression or punishment, verbal aggression, denial or removal of some benefit (including "the silent treatment", withdrawal of affection, etc...);

2) indirect aggression - telling a third party to get back at someone, harming something important to someone to get back at them, etc...;

3) displaced aggression - aggression taken out on someone or something other than who or what you are angry at.

1	2	3	4
Almost Never	Sometimes	Often	Almost Always

1. Do you behave as aggressively as you want?

1 2 3 4

2. Do you give too much time and thought to being aggressive?

1 2 3 4

3. When you get mad do you try to calm down before you act?

1 2 3 4

4. When you are feeling angry how often do you stop yourself from behaving aggressively?

1 2 3 4

5. Do you give in to your aggressive impulses?

1 2 3 4

6. How often do you "count ten" when you are angry?

1 2 3 4

7. Do you pay careful attention to your behaviour to avoid being aggressive?

1 2 3 4

8. How often do you deliberately control your anger?

1 2 3 4

9. Do you behave less aggressively than you want to?

1 2 3 4

10. Do you consciously hold back your anger?

1 2 3 4

1	2	3	4
Not at all	Somewhat	Moderately So	Very Much So

11. Do you attempt to stop yourself from carrying out your aggressive desires?

1 2 3 4

12. When you are hot under the collar do you deliberately try to keep your cool?

1 2 3 4

13. Do you try to control your temper?

1 2 3 4

14. Do you try to resist the desire to take your anger out on somebody or something?

1 2 3 4

15. Do you make an effort to stop yourself from being aggressive?

1 2 3 4

16. I believe that life is too short to worry about controlling my anger.

1 2 3 4

17. Which of the following best describes you?

1 I almost always behave aggressively when I want to, and almost never limit my aggressive desires.

2 I often behave aggressively when I want to, but sometimes limit my aggressive desires.

3 I sometimes behave aggressively when I want to, but often limit my aggressive desires.

4 I almost never behave aggressively when I want to, and almost always limit my aggressive desires.

APPENDIX TWO: The Restraint of Aggressive Desires (ROAD) Scale.

CODE NUMBER:___

AGE: ___

SEX: ___

QUESTIONNAIRE INSTRUCTIONS

This questionnaire explores aspects of anger and aggression. Please read each question carefully and circle the number under the statement which best describes you. If you find it difficult to make up your mind please make a "best guess".

Please note that where the words "aggression" or "aggressive(ly)" are used the question refers to ALL types of aggressive behaviour, i.e., included are:

1) direct aggression - physical aggression or punishment, verbal aggression, denial or removal of some benefit (including "the silent treatment", withdrawal of affection, etc...);

2) indirect aggression - telling a third party to get back at someone, harming something important to someone to get back at them, etc...;

3) displaced aggression - aggression taken out on someone or something other than who or what you are primarily angry at.

1	2	3	4
Almost Never	Sometimes	Often	Almost Always

---

1. When you are feeling angry how often do you try to stop yourself from behaving aggressively?

1 2 3 4

2. How often do you deliberately make an effort to control your anger?

1 2 3 4

3. Do you attempt to stop yourself from carrying out your aggressive desires?

1 2 3 4

4. Do you behave as aggressively as you want?

1 2 3 4

5. Do you consciously attempt to hold back your anger?

1 2 3 4

1	2	3	4
Not At All	Somewhat	Moderately So	Very Much So

---

6. Do you try to resist the desire to take your anger out on somebody or something?

1 2 3 4

7. Do you make an effort to stop yourself from being aggressive?

1 2 3 4

8. Do you give in to your aggressive impulses?

1 2 3 4

9. When you are hot under the collar do you deliberately try to keep your cool?

1 2 3 4

10. Do you try to control your temper?

1 2 3 4

APPENDIX THREE: The Self-report Aggressive Behaviour Questionnaire (SABQ)

CODE NUMBER: ____

AGE: ___

SEX: ___

AGGRESSIVE BEHAVIOUR QUESTIONNAIRE

This questionnaire is concerned with aggressive behaviour in response to getting angry.

The following types of aggressive behaviour are referred to in this questionnaire:

¡) Direct Aggression: verbal or symbolic, e.g., verbal abuse such as swearing, sarcastic remarks, shouting angrily at children; symbolic gestures of abuse or insult such as "the fingers", etc...;

¡¡) Direct Aggression: denial or removal of some benefit customarily enjoyed by the person you are angry at, e.g., withdrawal of affection, using "the silent treatment", refusing sex with partner, etc...;

¡¡¡) Direct Aggression: physical aggression or punishment, e.g., punching, kicking, scratching, hitting a child out of anger, throwing something at the person, assault, etc...; or against an animal or nonhuman object, e.g., hitting a piece of furniture when you trip over it, kicking a dog when it gets in your way, etc...;

¡v) Indirect Aggression, e.g., telling something to a third party in order to get back at the person you are angry at, harming something important to the person you are angry at, etc...;

v) Displaced Aggression, i.e., aggression taken out on someone or something other than who or what you are primarily angry at:
-against a person, e.g., abusing spouse or child after a hard day at work; or
-against an animal or nonhuman object, e.g., throwing things, punching a wall, slamming doors, kicking the cat, etc...

P.T.O.

For each of the following types of aggression, please estimate the number of times you have behaved aggressively in the last two months in response to getting angry. Please also estimate the average intensity of those aggressive behaviours. Descriptions of the types of aggression are on page 1.

NUMBER OF TIMES	AVERAGE INTENSITY			
	1 MILDLY AGGRESSIVE	2 SOMEWHAT AGGRESSIVE	3 MODERATELY AGGRESSIVE	4 VERY AGGRESSIVE
1. Direct Aggression: verbal or symbolic.				
☐	1	2	3	4
2. Direct Aggression: denial or removal of some benefit customarily enjoyed by the person you are angry at.				
☐	1	2	3	4
3. Direct Aggression: physical aggression or punishment.				
☐	1	2	3	4
4. Indirect Aggression.				
☐	1	2	3	4
5. Displaced Aggression.				
☐	1	2	3	4

APPENDIX FOUR: Consent Form.

NAME: _____

CONSENT FORM

I understand that the research carried out by Derek Willis involves a series of questions on anger and aggression. I understand that I shall answer three questionnaires which will take about half an hour. The information I provide will be confidential to Mr. Willis, and nothing will appear on my prison file.

Signature:

Witness:

Date:

APPENDIX FIVE: Correlation Summary Tables.

CORRELATION TABLE: STUDENTS.

	T-Ang.	AX/In	AX/Out	AX/Con	ROAD	Af
T-Anger						
AX/In	0.05					
AX/Out	0.56	- 0.19				
AX/Con						
ROAD	- 0.08	0.34	- 0.31	0.27		
Af	0.31		0.21		- 0.12	
Ai	0.37			- 0.30	- 0.22	0.43

CORRELATION TABLE: PRISONERS.

	T-Ang.	AX/In	AX/Out	AX/Con	ROAD
T-Anger					
AX/In	0.32				
AX/Out	0.76	0.08			
AX/Con					
ROAD	- 0.55	0.06	- 0.50	0.63	